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OFFICIAL JOURNAL
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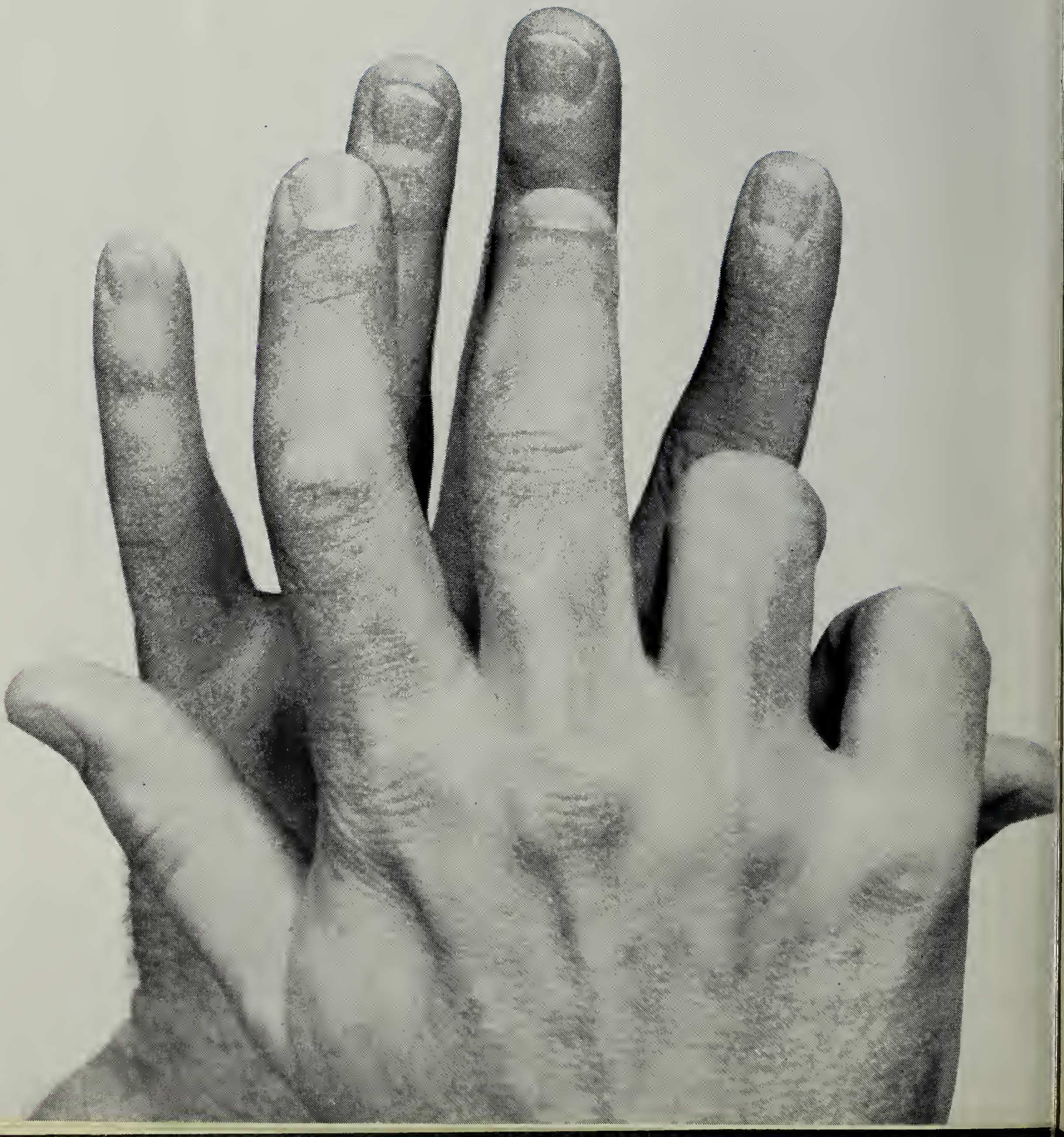

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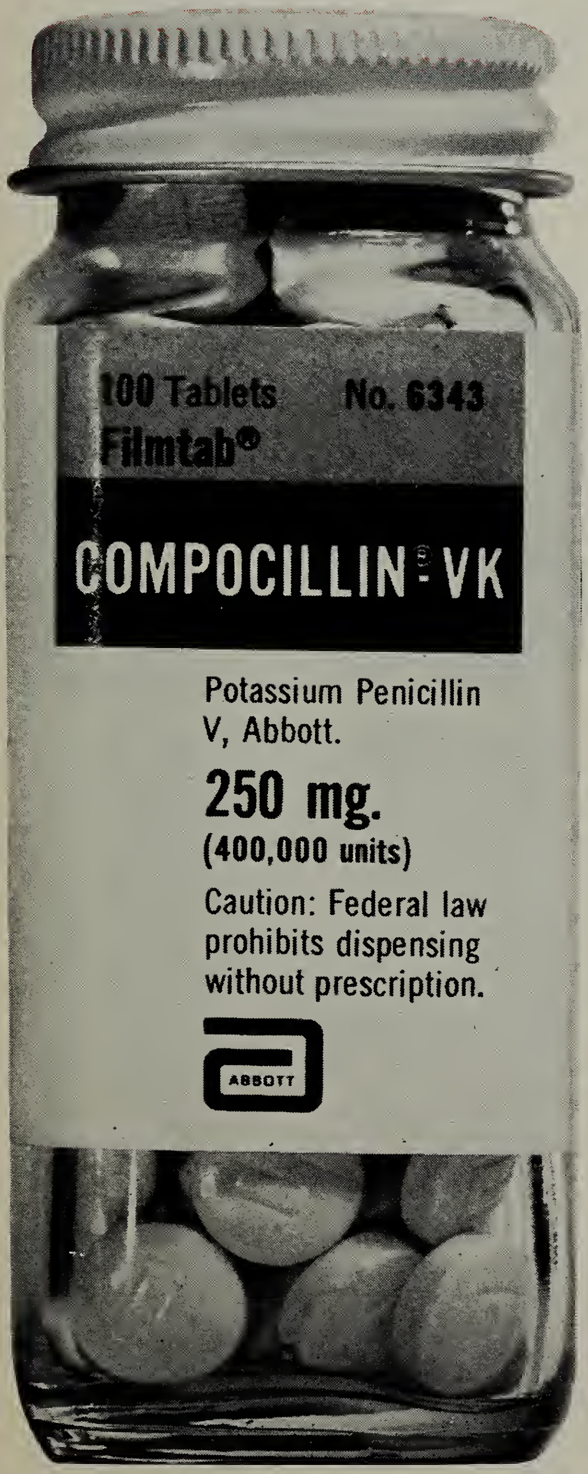
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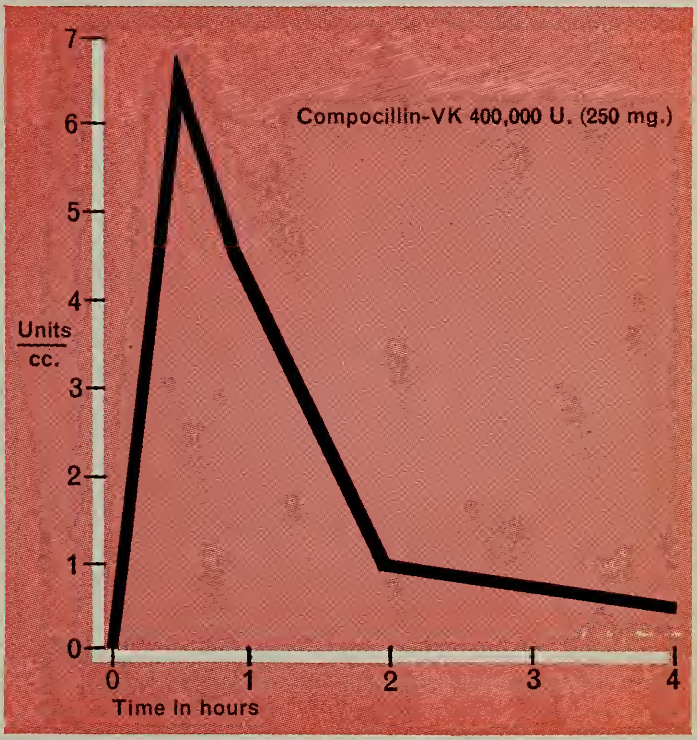

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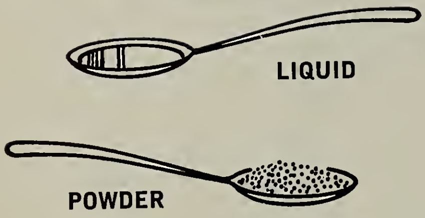

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References: 1. Raddin, J. B., and Dowell, L. B.: Amer. J. Gastroent. **37**:24-40 (January) 1962. 2. Calloway, N. O.: Article to be published. 3. Reichert, J. L.: Pediat. Clin. N. Amer. **2**:527-538 (May) 1955. 4. Hootnick, H. L.: J. Amer. Geriat. Soc. **4**:1021-1030 (October) 1956.

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Stitches for Boxers' Cuts Suggested Between Rounds

Boxers' cuts should be stitched between rounds to reduce the chance of infection and increase the fairness of the bout, Dr. D. Ralph Millard Jr., a Miami plastic surgeon, said recently.

Unsutured cuts are torn wider and pounded with bacteria as the fight continues, he said in a letter to the editor published in the October 20 *Journal of the American Medical Association.*

Immediate suturing of a cut during the one-minute corner rest period would check bleeding, clear vision, reduce infection and prevent further tearing, he said.

With the permission of the Miami Boxing Commission, Dr. Millard said he stitched a brow cut suffered by a welterweight boxer last July. The boxer was able to continue the fight, he said, and later blows received did not reopen the wound.

Many a fight has been lost by a technical knockout due to a cut when the injured fighter was actually winning, Dr. Millard said. This is unsatisfactory not only because most cuts are of little consequence but because they are caused by a head butt which is itself a foul, he said.

Immediate suturing of cuts would increase fairness in important amateur bouts and could be vital to a professional fighter when winning is his livelihood, he said.

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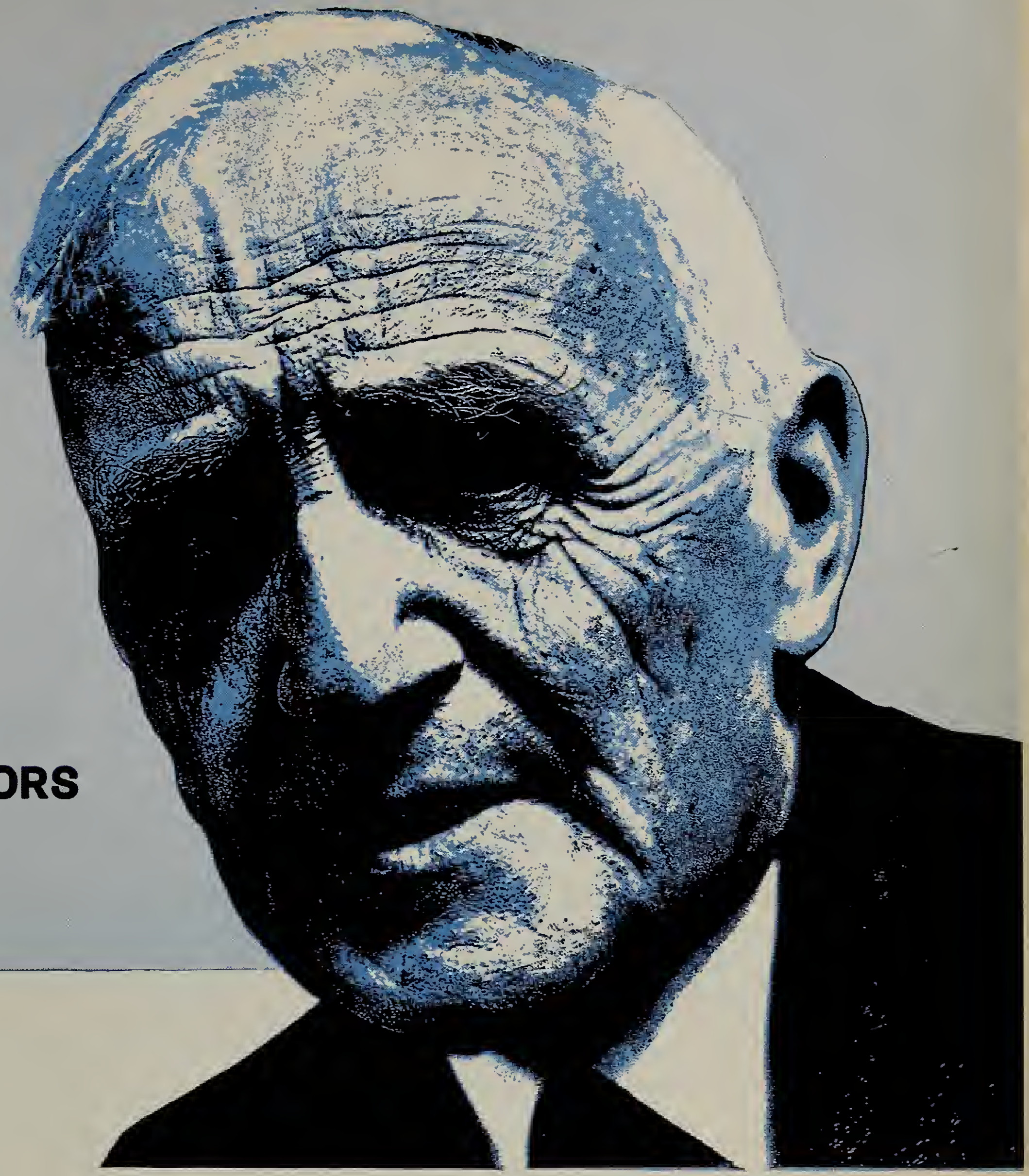

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[1] Ford, R. A., and Blanchard, K. P.: J.-Lancet 78:185, 1958.

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Miss America's Diet Not Recommended

The diet used by Jacquelyn Mayer, newly chosen Miss America, is a typical "crash" diet which "has no respectable place in good nutrition," according to Philip L. White, Sc.D., secretary of the American Medical Association's Council on Foods and Nutrition.

The public pronouncement by Miss Mayer that she weighed 150 pounds when she was 15 and that she lost weight by skipping lunch and sometimes going without breakfast may touch off similar crash dieting among teenagers, Dr. White warned.

There is no doubt that this type of "semi-starvation" diet will take off weight in a hurry, he said. However, he said, "teenagers end up so run-down and ripe for serious illness that they seldom do it a second time."

Dr. White said such diets can cause anemia, general malaise and nutrient deficiencies, and may bring many latent problems to the surface. He added that one of the major problems is the teenage girl who isn't overweight, but who thinks she will be more attractive if she loses 10 pounds.

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Shock Used to Treat Patients With Abnormal Heart Beat

An electrical charge delivered to the chest appears to be a "highly promising" method for stopping various types of abnormal heart beat, according to an article in the November 3 *Journal of the American Medical Association.*

A brief electrical shock of 3,000 to 7,000 volts across the chest halted abnormal heart actions in 27 of 29 patients, Bernard Lown, M.D., Raghaven Amarasingham, M.B., and Jose Neuman, M.D., Boston, reported in the *Journal.*

Although these preliminary results are encouraging, they said, further study is necessary.

The shock breaks up the electrical pattern causing the abnormal heart beat and allows the normal pattern to resume, the authors explained.

Patients are anesthetized for two to five minutes while the procedure is performed, they said. So long as anesthesia is required, they said, the technique is recommended only for patients who are not helped by drug therapy.

In earlier attempts to stop the convulsant or too rapid heart beat, which usually occurs as a complication of heart disease, alternating current has been used, the researchers said, but this method had been hazardous because the shock could by itself provoke an abnormal heart beat.

The new method grew out of experiments indicating that direct current was safer than alternating current in this respect and the discovery that it was only at certain points of the heart's contraction-relaxation cycle that a shock could provoke an abnormal beat, they said.

Therefore, an instrument was developed consisting of two components, one to discharge a direct current shock and the other to synchronize release of the charge at a predetermined point of the heart cycle, they said. In this way, they said, the vulnerable period is avoided and the hazard of provoking an abnormal beat prevented.

This synchronized technique is simple to employ, results are immediate, there is no evident depression of heart action, and there are no side effects, the researchers said.

The two patients who did not respond, they said, were treated immediately following heart operations and the presence of blood in the operative field may have served to short circuit the current and divert the energy from the heart.

1962—A Year of Medical Development

The year 1962 was one of vast development in a wide field of medical sciences, a poll of the specialty sections of the American Medical Association revealed.

There may, in fact, have been several "breakthroughs"—but because of the growing complexity and intertwining of medical knowledge it could take some time to uncover these.

This was nowhere better exemplified than in the field of genetics where, in the footsteps of Drs. F. H. C. Crick, M. H. F. Wilkins and J. D. Watson, this year's Nobel Prize winners in medicine, the long-heralded breakdown of the genetic code is firmly underway. Breaking the code could be a gigantic step into the future for medicine, but first more knowledge will have to be developed.

The code, intertwined in a thread-like molecule of deoxyribonucleic acid (DNA), dictates all growth and life functions from the nucleus of every living cell.

It is reasoned that if this molecule is out of kilter it may create a chemical imbalance in the body, leading to defects or weaknesses. If an individual's code could be studied, then discovery of such imbalances might be possible and corrections made, perhaps by drugs or perhaps by juggling the code itself.

But knowing the code is not enough. There must also be an understanding of other complex unknowns of body chemistry and such understanding will probably require more years of research.

Advances in genetics, however, were not only in the field of deciphering DNA's code. Dr. Robert Gutherie of the University of Buffalo devised a blood test to determine at birth whether an infant suffers from phenylketonuria (PKU). This disease, caused by a chemical imbalance, prevents the body from breaking down certain food acids, which can cause irreparable brain damage. If this is known early enough, damage can be averted by control of the diet.

Another development which may lead to a general breakthrough in medicine was the discovery for the first time of a drug capable of curing a virus disease. Until now such diseases could only be prevented by vaccines.

At the A.M.A. annual meeting in Chicago, Dr. Herbert E. Kaufman of the University of Florida offered proof that application of the drug 5-iododeoxyuridine kills off the herpes simplex virus which invades the cornea of the eye and may cause blindness.

Viruses work their destruction within living cells. Until now the only way to eliminate such viruses was to destroy the cells, causing as much harm as

(Continued on Page 29)

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1962—A Year of Medical Development

(Continued from Page 27)

the virus. But Dr. Kaufman's findings offer hope that other virus cures will be found.

Another developing field in 1962 was that of medical transplants—replacing worn and diseased human parts with those of another person. The stumbling block to such operations has always been the body's usual refusal to accept the tissues of another person, unless that person is an identical twin.

Attempts to break down this reaction by heavy radiation or extremely strong drugs have been partially successful, but such methods often produce harm.

Proof in 1962 that the thymus gland is the seat of the body's defense mechanism, which rejects transplants, triggered hope that in the not too distant future manipulation of the gland and its secretions may make possible successful transplants.

While some success has been recognized in kidney transplants, the only consistent success has been with cornea transplants, which has practically no blood supply and so has no built-in immunity.

New techniques also spurred advances in other fields of surgery.

Specialists developed two methods of stimulating failing hearts. One process uses an electrical shock to make the heart continue beating. Another uses chemical stimulators, implanted within the heart muscle.

There were also several methods devised to increase the flow of blood to the heart muscle. It was found that bits of spleen, which are rich in blood vessels, will take root when grafted to the muscle and thus increase the supply. Also pioneered was diversion of a chest artery to the heart muscle.

Significant in the field of ear surgery was development of surgical means for replacing vital middle ear parts with plastic or stainless steel.

Hypothermia, cooling of the body, was given wider use by surgeons during the year, particularly when operating on vital organs such as the heart and brain.

Super cold, at nearly 400 degrees below freezing, became a medical tool during the year. Using a hollow, needle-like device at this temperature, Dr. Irving S. Cooper of New York City freezes a small area deep within the brain.

By this means he is able to stop the tremor and rigidity associated with Parkinson's disease, which afflicts about 300,000 people in this country.

Another freezing technique, devised by Dr. Owen Wangensteen of the University of Minnesota, showed success in treating peptic ulcers. A balloon with tube attached is placed in the patient's stomach and inflated with a coolant.

(Continued on Page 31)

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1. Ford, R. V.: Clin. Res. Notes 2:1 (Dec.) 1959. 2. Ford, R. V.: Cur. Therap. Res. 2:92 (Mar.) 1960. 3. Elliott, J. P., Jr., and Goldman, A. M.: South. M.J. 54:794 (July) 1961.

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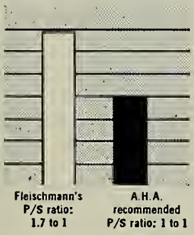

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*"The Regulation of Dietary Fat," Council on Foods and Nutrition of the American Medical Association. J.A.M.A., Vol. 181, No. 5 (August 4, 1962).

1962—A Year of Medical Development

(Continued from Page 29)

Meanwhile, experiments with dogs may open the way to other surgical techniques aimed at curing cancerous organs, ulcers and other ills. It was shown that stomachs, spleens, intestines and other organs could be taken out of dogs, given radical treatment even with radiation that otherwise would kill the dogs, and reimplanted.

As in preceding years, much of the effort in drug development was directed at cancer. No one drug proved completely successful, but several—notably thio-tepa, Methotrexate and 5-Fluorouracil—may point the way toward possible breakthroughs in the field.

Some gains were noted with the use of super-toxic doses of drugs—doses which normally would be fatal. It was found that these could be used in certain sections of the body if these sections are "tied off" from the regular blood supply and kept alive with heart-lung machines.

Another drug—Ethionamide—showed its merit in fighting tuberculosis, especially in view of the increasing resistance by the tubercle bacilli, which causes the disease, to present medications.

Other developments included new types of penicillins more efficient against drug-resistant bacteria and less likely to cause allergic reactions in patients.

There were also several pluses in the field of vaccines. The new measles vaccine was showing good results in field tests, although it is not yet on the market. Also, the way was possibly open for development of a German measles vaccine with isolation for the first time, of the rubella virus. This disease, if contracted by a mother in early pregnancy, may result in the birth of a defective child.

Also developed and being tested is a vaccine which promises success in malaria immunization.

The Sabin oral polio vaccine got its first wide-scale use, and by year's end had created somewhat of a storm. There were reports of a few cases of type III polio following inoculation with the Sabin type III vaccine. However, Dr. Albert Sabin said his studies showed no evidence that the cases were linked with his vaccine. At any rate, the incidence of polio appeared headed for an all-time low.

Public health in 1962 was less concerned with breakthroughs than with breakdowns. Smallpox created a scare and brought to light the fact that millions in America probably have no immunity to the disease. Taking note of the "dangerous low" in smallpox protection, the A.M.A. urged physicians and their patients to help rebuild the nation's level of immunity to the disease. Venereal disease, supposed to be on the way out five years ago, was making a strong comeback, as was tetanus, an easily preventable disease.

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1. Cohen, B. M.: M. Times 88:855 (July) 1960. 2. Cohen, B. M.: Méd. et Hyg. (Genève) #494, p. 210 (Mar. 15) 1961.

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Pneumonia as Complication Assessed in Younger Group

The occurrence of pneumonia as a complication of some other ailment may be more common in young persons than generally realized, according to an article in the September 29 *Journal of the American Medical Association.*

In a study of 234 patients with pneumonia, it was found that a substantial proportion of those both under and over 40 years of age had previous conditions which may have contributed to the pneumonia, Lt. Col. Theodore Bacharach and Major Harold S. Nelson, Letterman General Hospital, San Francisco, said.

There was a history of prior lung disease in 39 per cent of the patients under 40 and in 53 per cent of those over 40, they said. The most common previous lung disease was pneumonia which had occurred in 32 per cent of patients under 40 and in 34 per cent of those over 40, they said.

These findings indicate a need to consider the possibility of pneumonia as a complication in the young as well as in older age groups, the authors said.

In patients under age 40, they said, pneumonia may provide one of the earliest landmarks of recognizing patients with chronic lung disease, they said, and thus enable early treatment of a condition that might otherwise become a crippling lung disease.

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Action of Digitalis in Latent Cardiac Failure

ARTHUR SELZER, *M.D.*, San Francisco

• Treatment of cardiac failure consists of three principal methods or a combination of them: (a) rest, or reduction of overload; (b) diuretic therapy and sodium restriction, and (c) administration of digitalis. In a series of patients treatment with the aid of the first two methods was compared with the effect of adding digitalis to this regimen.

Clinically, most patients can be brought back to a state of compensation without the use of digitalis. Hemodynamically, digitalis exerts a further favorable action by improving cardiac performance. The discrepancy between clinical and hemodynamic cardiac state is emphasized, for patients may have no clinical evidence of cardiac failure and yet show hemodynamic abnormalities characteristic of serious impairment of cardiac performance. Thus digitalis has been shown to exert a favorable effect in cardiac failure even if such an effect cannot be clinically assessed.

In SPITE of the fact that digitalis is one of the oldest drugs in continuous clinical usage, its action is far from being well understood. The best known effect is its capability of controlling the ventricular rate in atrial fibrillation. Its efficiency in heart failure in the presence of normal sinus rhythm has been questioned or even doubted by no lesser authorities than Sir James Mackenzie and Sir Thomas Lewis. Only recently, with the help of newer physiological techniques, could a beneficial effect of cardiac glycosides be directly demonstrated in such cases. The advent of cardiac catheterization permitted the determination of the essential hemodynamic parameters to provide the final proof that the performance of the failing human heart is improved after the administration of a digitalis preparation regardless of heart rate or rhythm. Curiously, this information has coincided with decreased, rather than increased, clinical usage of digitalis. Two reasons appear to be responsible for this trend, the changing concepts of cardiac failure and the availability of powerful diuretic drugs which "outshine" digitalis in its effect in combating cardiac failure.

If we are confronted with a patient in overt cardiac failure who has not been previously treated we can choose one of three component methods of the overall therapy of cardiac failure, or any combination thereof: (a) rest; (b) diuretic therapy and sodium restriction and (c) cardiotonic drugs. In mild cardiac failure each of these methods alone can restore compensation. Bed rest alone is the slowest but nevertheless an effective method of controlling mild cardiac failure. Digitalis, in the presence of sinus rhythm, is faster but unspectacular in its capability to combat symptoms and signs of cardiac failure. The use of diuretics is by far the most effective and fastest method and is therefore the method of choice. In cases of severe failure, two or even all three methods have to be employed to control fail-

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Presented before the Section on Internal Medicine at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

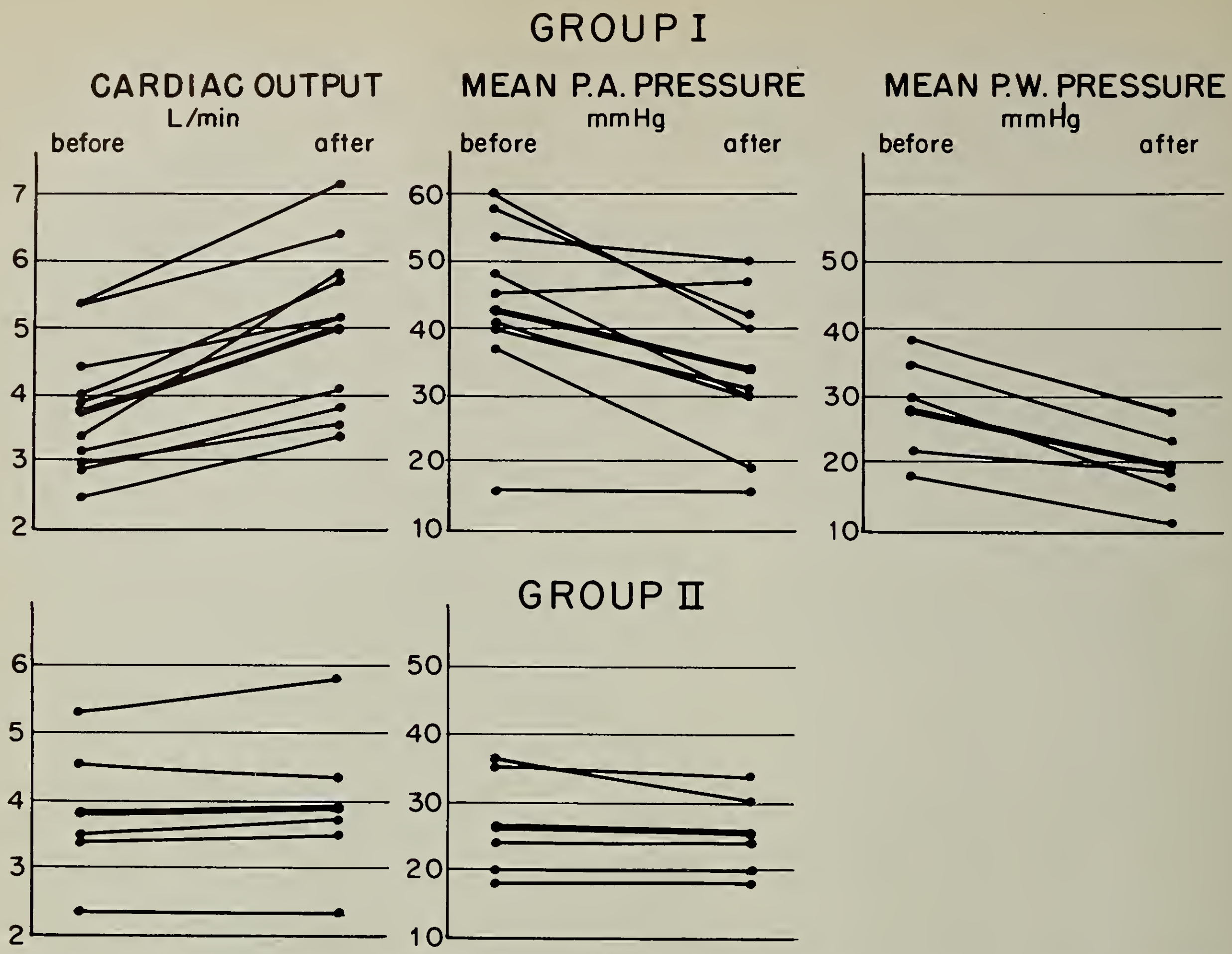

Chart 1.—Graphic presentation of hemodynamic changes produced by the administration of digoxin in patients who responded (Group I) and in those who did not (Group II). Key to abbreviations, page 2.

ure. The reliability and rapidity of action of diuretics contrasted with the slower action of digitalis caused some clinicians to omit the latter altogether, or to use it out of a sense of tradition as an ancillary mode of treatment.

One could ask the question, why treat heart failure by relieving fluid retention—a sequel to cardiac failure—when digitalis could improve the performance of the failing heart? Present concepts of the pathogenesis of cardiac failure help to explain that the removal of edema fluid should not be considered mere symptomatic treatment. In cardiac failure, the performance of the heart as expressed by the relationship between atrial filling pressure and cardiac output is located on the "descending" limb of the familiar curve of Starling, or, to express it in more modern terms, the performance curve of the heart is shifted to the right. Use of digitalis is only one of several ways by which cardiac performance could be returned to the ascending limb of the curve (or shifted back to the left). Rest alone could accomplish this in certain circumstances, and so could reduction in blood volume. To appreciate the importance of the "auxiliary" therapeutic procedures, one need only recall the early observations of McMichael and Sharpey-Schaeffer, who showed that phlebotomy exerts a beneficial effect upon the circulation identical with that of digitalis.

KEY TO ABBREVIATIONS

P.A.=Pulmonary artery pressure (mm. of mercury).
P.W.=Pulmonary wedge pressure (mm. of mercury).
C.O.=Cardiac output (liters per minute).
L.A.=Left atrial pressure (mm. of mercury).
P.V.R.=Pulmonary vascular resistance (dynes·seconds·cm.$^{-5}$).

It would appear, therefore, that each of the three therapeutic maneuvers mentioned above may exert an independent beneficial influence upon cardiac performance in heart failure. With these considerations in mind, a study was undertaken to try to assess the respective importance of digitalis as compared with the other two methods in controlling cardiac failure.

The study[3] included a series of 15 patients who entered the hospital in overt cardiac failure. The principal cardiac lesion causing failure involved the left ventricle in all cases. Five of the patients had chronic hypertension; eight had ischemic cardiac disease, mostly with healed myocardial infarcts, and two patients had aortic valvular heart disease. The age of the patients ranged from 40 to 74 years. All patients showed signs and symptoms of left ventricular failure, moderate or severe in degree; ten patients had, in addition, evidence of right ventricular failure. All patients showed fluid retention as evidenced by loss of body weight, ranging from 5 to 62 pounds, during the initial stage of treatment. Even though patients were admitted in a state of overt cardiac failure, all had had symptoms for periods of from three months to six years, which attests the chronicity of cardiac overload leading to failure.

None of the patients had taken digitalis in any form for at least a month before entering the hospital and none had atrial fibrillation. All patients were placed on a regimen consisting of rest, moderate sodium restriction and intermittent administration of diuretic agents. After a period varying from 10 to 20 days the patients reached a stable state, when the body weight reached a plateau and signs and symptoms of cardiac failure were no longer in evidence. At this point a hemodynamic study was performed, during which the acute effects of a full dose of digoxin were observed. By means of cardiac catheterization, pulmonary arterial and left atrial pressures were recorded and the cardiac output was determined in duplicate by the Fick method. Afterward, the patient was asked to perform moderate exercise by moving foot pedals, and circulatory measurements were recorded during a steady state of exercise. After the completion of this control study a dose of 1.25 mg. of digoxin was instilled through the catheter. As soon as acute circulatory dynamic effects of digoxin were known to have occurred, 40 to 60 minutes after drug administration, circulatory measurements were repeated in an identical fashion, using again the exercise test.

Results of the study showed two types of response to digoxin. In ten patients cardiac output was increased significantly, both at rest and during exercise, and left atrial and pulmonary arterial pressures were lowered. Thus in those patients circulatory parameters showed a significant change toward more normal values, although they reached the normal range rarely. In five patients no effect or minimal effects of digoxin were observed. Chart 1 shows circulatory changes in those who responded to digoxin and in those who did not. This rather sharp difference in response to the drug led to an investigation of the clinical data in the two groups in order to see whether they may also differ in respect to the type of cardiac disease and the various clinical factors leading to cardiac failure. It was found that all clinical features were comparable in the two groups in that the ages, etiological factors, duration and severity of cardiac failure did not differ. It was then concluded that individual variations in response to the administration of digitalis are the probable cause of the difference between the two groups. This is not surprising, considering that in overt cardiac failure digitalis is ineffective in 15 per cent of cases.[3] An example of a striking hemodynamic effect of digoxin is presented in Chart 2. The patient, a 44-year-old man with pure mitral regurgitation, was in controlled cardiac failure, asymptomatic, at the time of the baseline study. His cardiac output was abnormally low, although it rose with exercise. Left atrial pressure was considerably elevated and the pulmonary arterial pressure was high, out of proportion to left atrial hypertension, indicating high pulmonary vascular resistance. Following the administration of digoxin the resting cardiac output rose to almost twice the resting level and showed a corresponding increase with exercise. Left atrial pressure fell slightly but pulmonary arterial pressure decreased considerably, showing a striking decrease in pulmonary vascular resistance, presumably a relaxation of pulmonary arteriolar spasm.

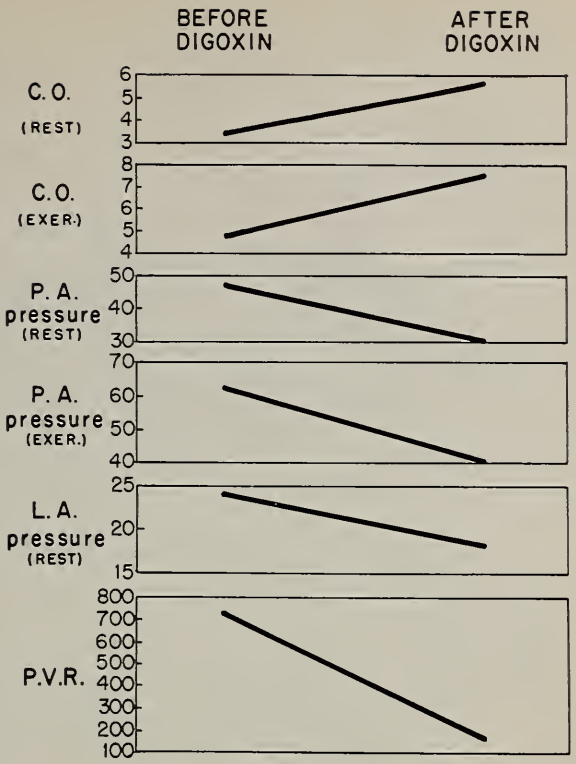

Chart 2.—Example of striking response to administration of digoxin in a patient in latent cardiac failure. Key to abbreviations, page 2.

The question of the contribution of digitalis to the state of compensation in latent cardiac failure was approached from another angle, as shown in Chart

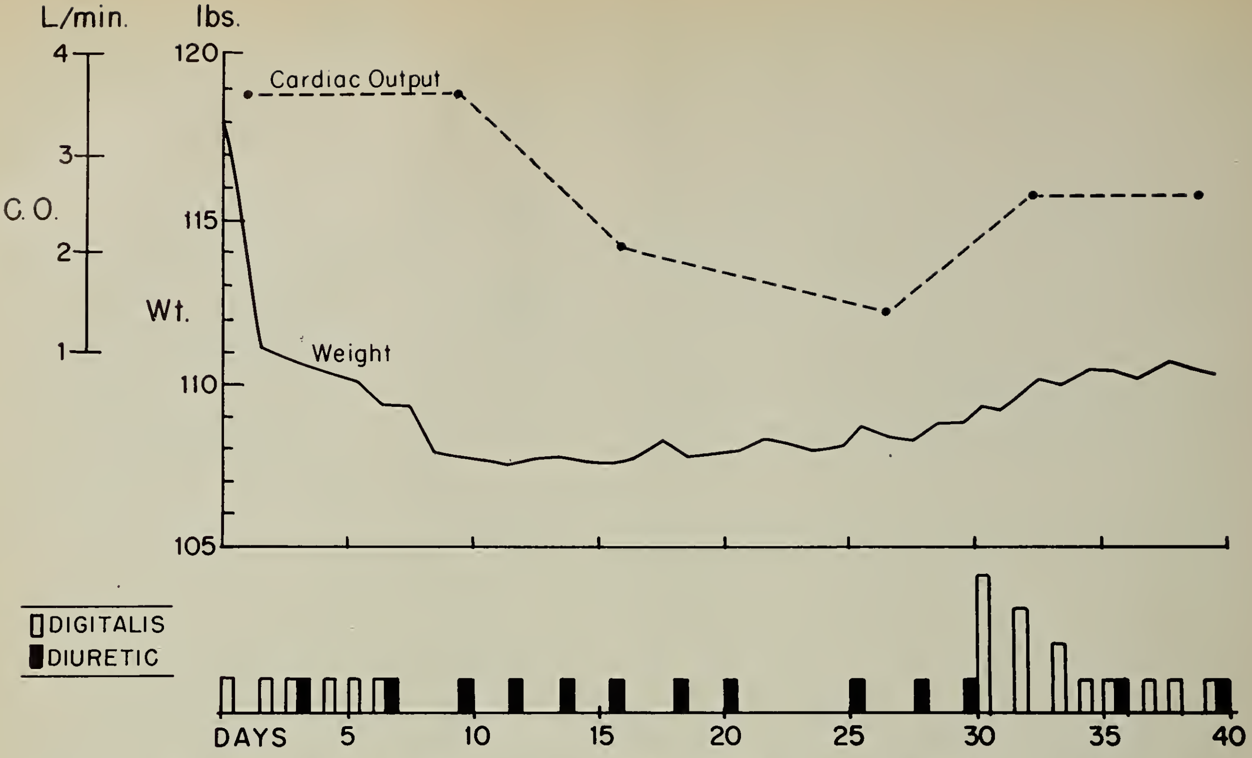

Chart 3.—Summary of data in a patient in chronic cardiac failure showing the effect of withdrawal and later addition of digitalis to the medical regimen. Key to abbreviations, page 2.

3. This concerns a 53-year-old patient who was in chronic cardiac failure following myocardial infarction two years previously. In spite of digitalis, salt restriction and intermittent administration of diuretic agents, the disease was incompletely controlled and the patient was admitted to hospital. In response to treatment in hospital she lost excess fluid at which point digitalis was discontinued. In spite of a strictly controlled regimen, coincidentally with the omission of digitalis, cardiac output fell (Chart 3). The clinical condition showed gradual deterioration. Redigitalization of the patient led to improvement of hemodynamic parameters, but the maximum level was below the original one, suggesting that circulatory adaptation was set back irreversibly.

Among patients in chronic failure there are some in whom the mechanism leading to the overloading of the left ventricle and then to its failure is reversible. This is best exemplified by the surgical correction of a lesion that is increasing the left ventricular load.[2] Occasionally, successful control of hypertension may decrease the work of the heart sufficiently to permit recovery from cardiac failure without the use of other methods of therapy. In two patients, treatment of hypertension was compared with the effect of digitalis in controlling cardiac failure. Chart 4 presents data collected in a case of a 42-year-old woman who entered hospital in left ventricular failure due to severe diastolic hypertension. The patient had an abnormally low cardiac output, prolonged circulation time and a pronounced gallop rhythm. Without change in regimen the patient was placed on hypotensive therapy which proved exceedingly effective, reducing her blood

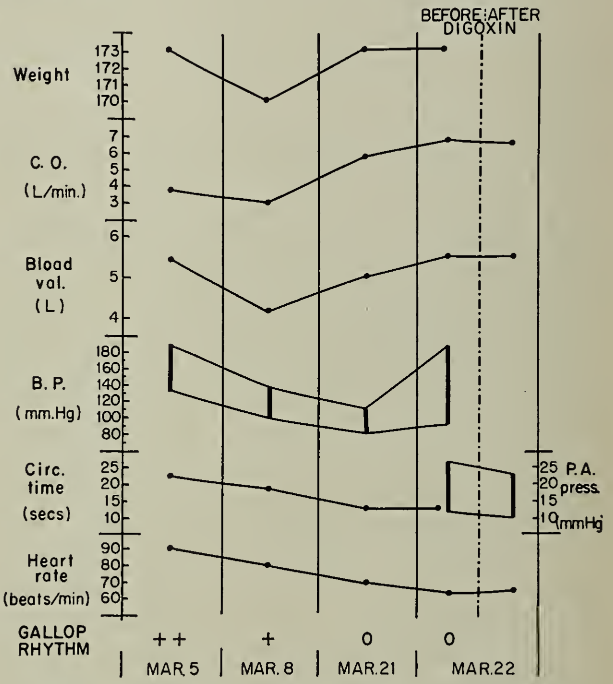

Chart 4.—Summary of findings in a patient with hypertension, showing the effect of hypotensive therapy and then the effect of digitalization. Key to abbreviations, page 2.

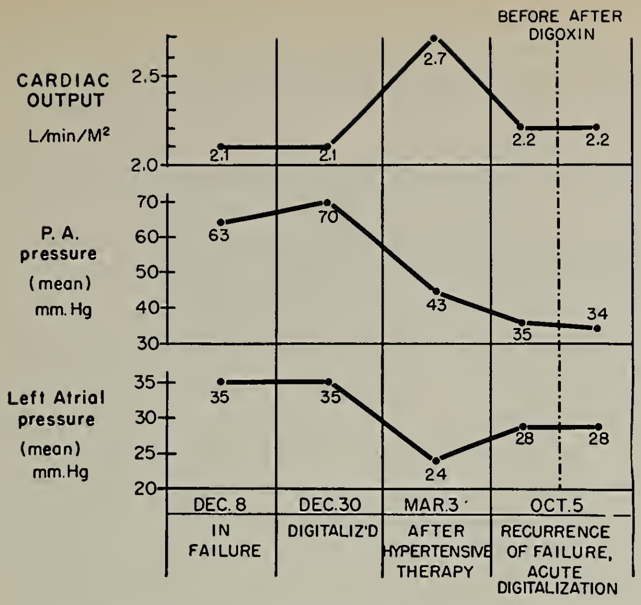

Chart 5.—Summary of findings in a patient with hypertension comparing the effects of hypotensive therapy with that of administration of digitalis. Key to abbreviations, page 2.

pressure to normal within two weeks. Coincidentally with this, the gallop sound disappeared, the heart rate became slower, the circulation time became normal and the cardiac output increased to a normal level. A hemodynamic study was performed at this point and showed normal values. The full intravenous dose of digoxin (1.25 mg.) was totally ineffective. This case illustrates a prompt and complete reversal of left ventricular decompensation brought about by elimination of hypertension. The ineffectiveness of digitalis is understandable, since this drug has been shown to produce no detectible hemodynamic changes in the presence of normal circulation. It is noteworthy that conventional methods of treatment of cardiac failure seldom are capable of restoring a totally normal hemodynamic pattern such as was brought about in this case.

Chart 5 presents hemodynamic data on a 57-year-old man with chronic left ventricular failure due to hypertensive disease. This patient was admitted with overt cardiac failure and was treated with rest and diuretics until "dry" weight was reached and symptoms of cardiac failure were no longer present. The first hemodynamic study showed grossly abnormal findings: Left atrial pressure was very high at 35 mm. of mercury (normal: 10 mm.); pulmonary arterial mean pressure showed severe hypertension at 63 mm. of mercury (normal: less than 20 mm.) and the cardiac output was low at 2.1 liters per minute per square meter (normal: higher than 2.7 liters per minute per square meter). The patient was given a full dose of digitalis daily over the next three weeks. A repeat study showed no change whatsoever. Hypotensive therapy then was given and was moderately effective, although it did not reduce the pressure to normal levels. At that point an appreciable hemodynamic improvement was observed (March 3 study shown on Chart 5) with increase of resting cardiac output to low normal level and significant reduction of left atrial and pulmonary arterial hypertension, although both were still abnormally high.

The patient was discharged and gradually became lax in his medical regimen. Readmitted six months later, he was again in gross cardiac failure. Hypertension, however, was found to be less severe than during the first admission. A regimen of rest and diuretic therapy was begun again, and upon the reestablishment of his "dry" body weight a hemodynamic study with the use of digoxin intravenously was performed. Again it was ineffective. This case illustrated several points: in the first place the patient was a "non-responder" to digoxin, for although the circulatory dynamics were grossly abnormal on two occasions, no improvement resulted from the administration of the drug in either instance. In the second place, the myocardium, incapable of performing better in response to digitalis, was still capable of improvement when the hypertensive overload was reduced. Finally, when neglect of medical therapy brought about recurrence of cardiac failure, the circulatory dynamics were significantly better than they had been during the first bout, presumably because the hypertensive stimulus was of lesser magnitude.

In interpreting the results of these studies it is necessary to discuss briefly the relationship between clinical and hemodynamic manifestations of cardiac failure. The most important hemodynamic manifestation of failure of a cardiac ventricle is its elevation of end-diastolic filling pressure, which, under ordinary circumstances, is also shown as high atrial and venous pressure on the affected side of the heart. It is obvious that high systemic venous pressure as a manifestation of right ventricular failure can be directly observed or measured, while elevated pulmonary venous pressure signifying left ventricular failure cannot be diagnosed without cardiac catheterization. Indirect signs of left ventricular failure, such as gallop rhythm and pulmonary rales, are crude and unreliable.

In recent years it has become obvious that chronic elevation of left atrial pressure may take place without producing cardiac disability.[1,4] It has been demonstrated that patients who recover from clinical manifestations of left ventricular failure as a rule show still serious hemodynamic abnormalities. The state of "latent" cardiac failure is thus defined as a condition in which hemodynamic but not clinical manifestations of left ventricular failure are present.

A clinician treating a patient with overt left ventricular failure has no way of assessing his success as to whether he has abolished cardiac failure or merely changed it into the latent stage. It follows that only a hemodynamic assessment can answer the question whether rest, diuretic therapy and the use of cardiotonic drugs in combination is superior to a single method of treatment.

In the present study all patients were treated without digitalis until signs of cardiac failure were no longer present, fluid retention was entirely eliminated and symptoms disappeared. Yet the baseline hemodynamic study revealed the presence of latent cardiac failure in every patient. In two-thirds of the patients, digitalis administered at this point produced a significant, often striking hemodynamic improvement. The patients, though, were unaware of this improvement, since they already were asymptomatic at the time the drug was administered. It is noteworthy, however, that normal cardiac function was not restored in any patient, as hemodynamic findings indicated merely that the deviation from normal became less pronounced. If a normal cardiac function can be restored, as was shown in one hypertensive patient, then digitalis is ineffective, since the drug has no demonstrable action in the absence of cardiac failure. Thus it is seen that digitalis may contribute significantly to the therapy of cardiac failure by enhancing better performance of the impaired heart. This appears to take place regardless of whether other methods of treatment have clinically restored the state of compensation.

Presbyterian Medical Center, Clay and Webster Streets, San Francisco 15.

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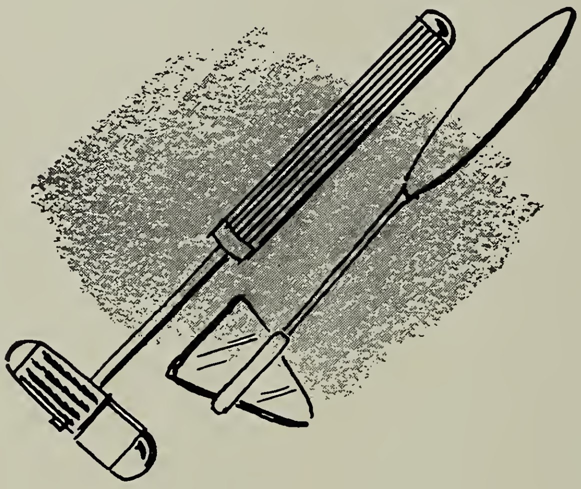

Acute Gastroduodenal Perforation

An Analysis of 496 Patients Treated Surgically

GEORGE L. JORDAN, JR., *M.D.*, and MICHAEL E. DeBAKEY, *M.D.*, Houston

• Of 496 patients treated surgically for acute gastroduodenal perforation, 144 were treated by simple closure, 317 by immediate subtotal gastrectomy, 22 by immediate hemigastrectomy and vagotomy and 13 by delayed subtotal gastrectomy. In our most recent experience with 225 consecutive resections, the postoperative mortality rate was no greater than that observed following elective subtotal gastrectomy for other complications of ulcer disease. A review of the late results indicated that the response of patients with this complication is similar to that of patients with other complications of ulcer disease treated in the same manner. It was concluded that a definitive surgical procedure should be employed as the operation of choice in properly selected patients.

PREVIOUS REPORTS from Baylor University College of Medicine have indicated that immediate subtotal gastrectomy may be applied to the management of acute gastroduodenal perforation in properly selected cases with an operative mortality no greater than that following other modes of therapy.[1-4] This definitive approach to the management of this serious complication of ulcer effectively interrupts the progress of the disease and prevents future complications. This report encompasses ten years of experience with resective therapy.

CLINICAL MATERIAL

The current study consists of an analysis of 496 patients treated for acute gastroduodenal perforation in the Baylor Affiliated Hospitals during an 11-year period ended December, 1961. Four hundred and thirty-three patients had duodenal ulcers, 52 had gastric ulcers, seven had marginal ulcers and four had cancer. Free perforation into the peritoneal cavity had occurred in all, and operation was undertaken in emergency. The interval between perforation and the beginning of surgical management varied from two hours to five days. Operation was performed as soon after diagnosis as the condition of the patient permitted. Sufficient time, however, was spent in preoperative preparation to replenish fluid and electrolyte depletion, to begin antibiotic therapy and to treat exigent medical conditions such as congestive heart failure or diabetic acidosis when indicated.

In the early portion of the study, before January, 1952, simple closure was used as the treatment of choice, but for the last ten years of the study gastrectomy was used as the treatment of choice unless contraindicated. Contraindications to immediate gastrectomy were (1) illness so critical that in the opinion of the surgeon the patient ought not to be subjected to a prolonged operative procedure and (2) the presence of technical problems which would make resection unduly hazardous.

No arbitrary rule was established as to what lapse of time after perforation might be taken as contraindication to resection, and some patients successfully underwent resection three to five days after perforation. In general, however, patients in whom perforation had been present for a day or more were seriously ill and were more likely to have intra-abdominal abscesses than those with perforation for a shorter period. Resection was not performed if there was pus within the peritoneal cavity. Consequently, in the majority of patients partial gastrectomy was done within 24 hours after perforation.

Three different types of resection were used in the study. In most cases immediate subtotal gastrectomy was carried out, using gastroduodenostomy or gastrojejunostomy for reconstruction of gastrointestinal continuity. In the last two years of the study, hemigastrectomy and vagotomy were used occasionally as a substitute for subtotal gastrectomy. Early in the study, delayed subtotal gastrectomy was used also. This consisted of treatment by simple closure followed by subtotal resection within two to four weeks after perforation without attempting to determine whether or not the patient might have additional symptoms. Only 13 patients were treated in this manner; the procedure was abandoned because of the high incidence of complications associated with the two operative procedures.

Presented before the Section on General Surgery at the 91st Annual Meeting of the California Medical Association, San Francisco, April 15 to 18, 1962.

From the Cora & Webb Mading Department of Surgery, Baylor University College of Medicine, Veterans Administration and the Jefferson Davis and Methodist Hospitals, Houston, Texas.

TABLE 1.—*A Comparison of Treatment of Acute Gastroduodenal Perforation in Three Periods*

Treatment	October, 1950 to December, 1951		January, 1952 to October, 1954		November, 1954 to December, 1961		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Simple closure	48	72.7	22	17.0	74	24.6	144	29.0
Immediate subtotal gastrectomy	15	22.7	97	75.2	205	68.1	317	63.9
Hemigastrectomy and vagotomy	0	0.0	0	0.0	22	7.3	22	4.4
Delayed subtotal gastrectomy	3	4.6	10	7.8	0	0.0	13	2.7
Total	66	100.0	129	100.0	301	100.0	496	100.0

RESULTS

To analyze results we divided the study into three periods. During the first period, from October, 1950, through December, 1951, simple closure was used as the treatment of choice, and subtotal gastrectomy was used only in selected patients—for example, in patients with combined perforation and hemorrhage. The second period from January, 1952, through October, 1954, represented the early phase of the use of gastrectomy as the treatment of choice, while the most recent period, ended December 31, 1961, represented continuing experience with this program (Table 1). At present, some 75 per cent of patients who are treated for acute perforation are considered candidates for resection.

Mortality and Complications: There was little variation in the mortality rate during the three periods (Chart 1). More patients died of peritonitis than of any other single cause, but all deaths from generalized peritonitis occurred before 1954. In 70 per cent of patients, death was due to factors other than intra-abdominal complications of the perforation. Most of those who died were elderly and debilitated with severe associated diseases. In the last five years of the period, for example, only two deaths were in patients less than 50 years of age. In one of these, aged 33, cardiac arrest developed on the operating table during subtotal gastrectomy. The patient was resuscitated but there was evidence of permanent cerebral damage and death occurred 20 days after operation. A second patient, aged 48, who had simple closure, died of renal failure and wound dehiscence 20 days after operation. The ages of the remaining patients who died during this period varied from 50 to 85 years.

A comparison of the mortality rates according to the procedure performed revealed that after we began using immediate subtotal gastrectomy as the treatment of choice, the mortality rate in patients treated with simple closure rose while the mortality rate associated with subtotal gastrectomy fell (Chart 2). In recent years, including patients treated both by standard subtotal gastrectomy and by hemigastrectomy and vagotomy, the mortality rate following resection has been as low as that observed following elective subtotal gastrectomy (0.9 per cent). On the other hand, the mortality rate following simple closure has remained quite high, reflecting the fact that this form of therapy was used primarily in patients who were poor operative risks. It is interesting, however, that in the over-all comparison of the various surgical procedures utilized, subtotal gastrectomy was done in 317 patients and the mortality rate associated with that operation was lower than that of any of the other methods. The experience with hemigastrectomy and vagotomy is as yet too small to reflect an accurate mortality rate, but it is to be anticipated that the mortality rate will be essentially the same as that following standard subtotal gastrectomy as our experience increases (Chart 3).

As in other studies, the mortality following

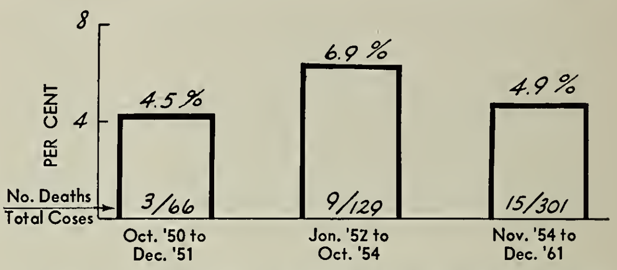

Chart 1.—Treatment of acute gastroduodenal perforation. A comparison of total operative mortality rates in three periods.

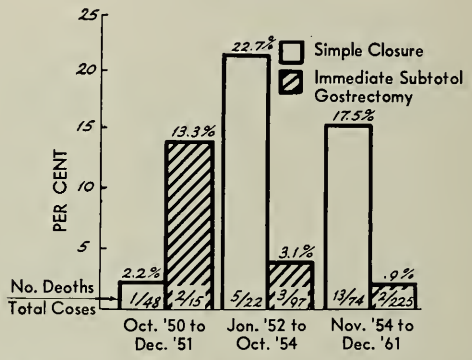

Chart 2.—Treatment of acute gastroduodenal perforation. A comparison of mortality rates in three periods according to type of operation. In the third period subtotal gastrectomy and hemigastrectomy and vagotomy are listed together under "immediate subtotal gastrectomy."

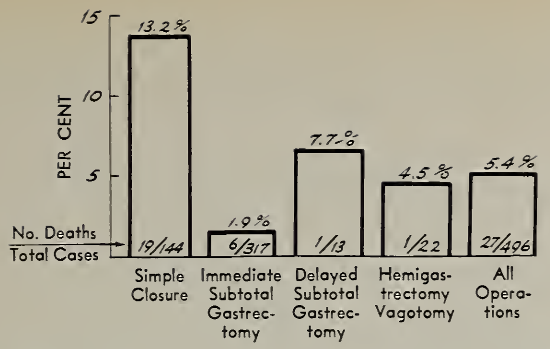

Chart 3.—Treatment of acute gastroduodenal perforation. Mortality rates according to procedure.

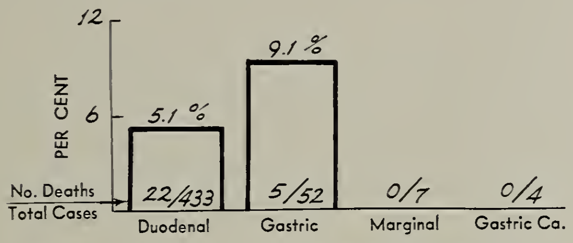

Chart 4.—Treatment of acute gastroduodenal perforation. Mortality according to location.

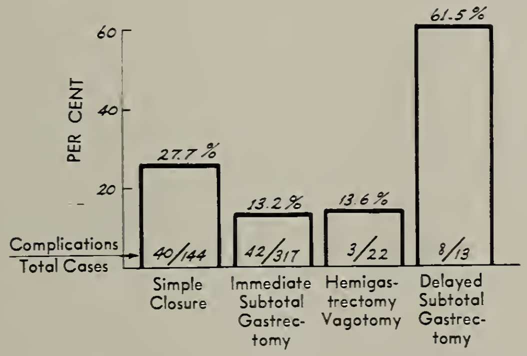

Chart 5.—Treatment of acute gastroduodenal perforation. Comparison of complication rates according to procedure.

treatment of perforated gastric ulcers was higher than that following treatment of perforated duodenal ulcers (Chart 4).

The incidence of complications remained essentially unchanged from previous reports, resective therapy being attended by the lowest rate (Chart 5). This is partly a reflection of the choice of patients, but it is noteworthy that the complication rate was lower than that following treatment of other complications of ulcer disease. Particularly significant is the absence of any leakage from the duodenal stump in the past eight years.

LATE RESULTS

Late results were studied only in the patients treated at the Veterans Administration Hospital. Of 137 consecutive patients treated by subtotal gastrectomy, 109 (79.5 per cent) were observed for periods ranging from four months to eight years. Of three who had carcinoma, two died in the follow-up period and one was still living more than a year after operation. The remaining 106 were treated for benign gastroduodenal ulceration, 98 having duodenal ulcers, six gastric ulcers and two marginal ulcers.

TABLE 2.—*Incidence of Marginal Ulceration According to Location of Ulcer and to Procedure*

Diagnosis and Procedure	Total Patients Treated	Patients with Marginal Ulcer	
		Number	Per Cent
Duodenal ulcer	98	4	4.1
Billroth I	23	4	17.4
Billroth II	75	0	0.0
Gastric ulcer	6	0	0.0
Marginal ulcer	2	1	50.0

Several years ago gastroduodenostomy was used as the method of reconstituting gastrointestinal continuity following resection for duodenal ulcer, but in our experience this procedure was followed with so high an incidence of marginal ulceration that it was abandoned. Of 23 patients with duodenal ulcers in the current series who were treated in this manner, four had recurrent ulceration and ulceration was suspected in a fifth. This proportion is similar to that observed following treatment of other complications of duodenal ulcer with this procedure.[2] On the other hand, there were no cases of proved marginal ulcer among the 75 patients with duodenal ulcer treated by Billroth II procedure (Table 2). One patient had pain consistent with recurrent ulcer but the diagnosis was not proved. This incidence of marginal ulceration is less than that seen after treatment of other complications of duodenal ulcer with this technique, where, in our experience, the incidence is approximately 3.5 per cent.

In the current series of perforated ulcers there were no recurrences following treatment of gastric ulcers regardless of the type of resection employed. There was one recurrence following treatment of marginal ulcer. The patient subsequently was proven to have the Zollinger-Ellison syndrome and was treated by re-resection as well as resection of the pancreatic neoplasm. There was no recurrence of ulceration in the five years the patient was observed after the operation.

Approximately 25 per cent of the 106 followed patients treated for benign disease experienced the dumping syndrome. In only one patient, however, were symptoms severe while in an additional seven they were moderate. In most of these patients the condition was satisfactorily controlled by conservative measures. Two patients had chronic afferent loop obstruction. In both (as previously reported[3]) operative correction of the obstruction relieved the symptoms. Seven patients (6.6 per cent) were clas-

TABLE 3.—*Incidence of Postgastrectomy Syndromes in Series of 106 Patients*

Syndrome	No. Patients	Per Cent of Series
Dumping	26	24.5
Mild	18	17.0
Moderate	7	6.6
Severe	1	.9
Afferent loop obstruction	2	1.8
Psychologic	7	6.6

TABLE 4.—*Classification of Results Following Treatment of 106 Patients with Benign Ulceration*

Result	No. of Patients	Per Cent
Excellent	63	59.4
Good	30	28.3
Poor	13	12.3
Total	106	100.0

sified as having symptoms referable to psychologic cause (Table 3). This incidence of psychologic symptoms is higher than that noted in other studies of gastric resection, but at present no particular significance can be attached to this observation.

The over-all classification of results does not vary significantly from that reported by us in an earlier study or from that commonly observed following the utilization of subtotal gastrectomy for other complications of duodenal ulcer; namely, almost 88 per cent had excellent or good results and only 12.3 per cent had poor results (Table 4). In five of these patients, the result was classified as poor because of demonstration or suspicion of marginal ulcer. In others, the poor result was related to postgastrectomy sequelae or to psychologic problems which interfered with the patient's normal daily activities.

Our experience with hemigastrectomy and vagotomy was too small and too recent for follow-up studies.

DISCUSSION

In the early phases of investigation of subtotal gastrectomy in the treatment of this disease, the history of previous ulcer disease was not considered a determining factor in deciding which procedure should be employed. More recently, however, there has been a tendency among some of the physicians participating in the study to reserve definitive surgical treatment for those patients with a significant history of ulcer disease in the past. All patients treated by subtotal gastrectomy without previous history of ulcer disease had a good or an excellent result; however, the number of patients in this category was not sufficient to permit definite conclusions concerning the superiority of one mode of therapy over the other. On the other hand, the evidence now available should leave no question concerning the value of a definitive surgical procedure when perforation represents a complication of chronic ulcer disease: the majority of such patients will continue to have symptoms following simple closure, whereas in properly selected patients termination to the ulcer problem can be safely brought about by immediate subtotal gastrectomy.

Currently we favor hemigastrectomy and vagotomy as the treatment of choice for complications of duodenal ulcer. We were reluctant to use this procedure in the presence of peritonitis, but reports from other centers which indicate that mediastinitis has not been a problem following vagotomy and pyloroplasty have encouraged us to institute an evaluation of hemigastrectomy and vagotomy.[5] Only 22 patients have been treated so far, but to date the complication rate is no different from that after standard subtotal gastrectomy. Additional experience will be necessary for valid comparison of the results of this form of therapy with that following standard subtotal gastrectomy, but the results obtained in treatment of other complications of ulcer disease suggest that it may be somewhat superior.

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Pathophysiological Considerations in Cardiac Operations

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IN THE LAST ANALYSIS, a pre-operative judgment of the dysfunction of the heart as a factor in determining whether corrective operation should or should not be undertaken, is based on three considerations:

1. What is the nature of the disability, how disabling is it in terms of patient comfort and of the limits of the patient's capacity to carry out his usual day by day activities, and what is the statistical outlook of life expectancy with the disorder present if operation is not done?
2. What is the risk, in statistical terms, of the contemplated operation? This is evaluated in relation to the experience of the most proficient surgical team and that of the given team expected to perform the operation.
3. What specifically is to be gained from the operation in terms of lessening of discomfort, increasing of the patient's performance capacity and lengthening his life expectancy—or rather of a *comfortable* life expectancy.

Cardiac surgery is something more than merely carrying out the surgical procedure properly in a correctly anesthetized patient. As much effort must be devoted to pre-operative evaluation and discussion as to other phases of the contemplated program. Operation on the heart is, in my judgment, a procedure which should be limited only to major medical centers for the present. This is so because only they can assemble the needed professional personnel. This should include a group of skilled surgeons experienced in the field and oriented to a thorough understanding of cardiovascular physiology as well as the physiology of hypothermia, of anesthesiology and of heart-lung machines.

A cardiovascular surgeon today must be more than a skilled technician, he must be a scholar with a particular talent to apply his knowledge to the problem of improving the performance of the heart by surgical means with the minimum risk of operative mortality and morbidity. During operation he is dependent on the anesthetist. The anesthetist must be someone who understands the problems of open-heart operations and hypothermia—a specialist in these two areas of anesthesia. A general anesthetist, in my opinion, is not good enough.

The surgeon is also dependent on his surgical colleagues, assistants, nurses and technicians who can work with him as a team in keeping the heart-lung machine and heat-exchanger operating effectively and in monitoring the necessary measurements which can assure him that the proper amount of blood is being circulated, that ventilation is adequate and that the heart is not deteriorating or developing unwanted irregularities, which may prevent the reestablishment of an adequate circulation once the patient is returned to the post-operative treatment suite. These colleagues must appreciate how hypothermia modifies these evaluations and must know when a deviation is of little or no moment and when the same deviation becomes a serious warning signal of impending danger. During and after operation, the cardiac internist or pediatrician can, and in many centers does, play as vital a role as in the pre-surgical period.

NOT only careful clinical appraisal but appropriate diagnostic procedures, including catheterization, angiocardiography, dye dilution studies and other procedures must be done in any case in which cardiac operation is being considered. Hence a group of what I call clinical physiologists, operating on a full-time basis, is an essential element in any medical center equipped to carry out cardiac operations. These clinical physiologists must be skilled in the several diagnostic approaches which involve the proper use of rather elaborate procedures and equipment. They must be clinicians as well, skilled in the whole gamut of cardiac conditions which are now or may in the future be amenable to surgical correction. It is not enough that they know how to carry out the procedures, they must be versed in clinical hemodynamics and in clinical cardiology.

I feel so strongly about each center having properly trained personnel that I would suggest that subspecialty boards for cardiac surgeons, cardiac anesthetists and cardiac clinical physiologists might

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be set up, as they are for internists and pediatricians. There are in my judgment too many places which have catheterization equipment, angiocardiographic equipment or heart-lung machines and because of this *alone* they believe that they can and should perform the diagnostic procedures and the cardiac operations. Regrettably, cardiac surgery has become a prestige item, a status symbol, for every community hospital. It is my view that this spreads out the case load so thin that many hospitals do so few cases a year as to lack the essential continued practical experience to maintain their skill for the complex procedures required in the diagnosis of and operation upon cardiac disorders.

One other point which needs to be stressed is that success in cardiac surgery comes from teamwork. While it is obvious that during operation only one person, the chief surgeon, can be in command if things are to be kept under control, such a monolithic arrangement is not necessary preoperatively. At this stage the team should handle its work in a democratic fashion, the cardiologist and clinical physiologist having equal standing with the surgeon.

THE steps in the pre-operative work-up are: (1) suspicion of a surgically correctable cardiac state—usually raised by the family physician. (2) The diagnostic work-up, combining the skills of the internist or pediatrician, preferably a cardiologist, and the clinical physiologist. (3) The staffing of the case, at first without and then with the surgeon.

The first staffing is to arrive at a definitive judgment of the nature of the disorder and its operability. It should include a complete work-up to alert the team of possible post-operative complications, particularly hematological in cases where open-heart operation is contemplated. After this staffing is completed, the surgeon should be called in to discuss the decisions arrived at and to consider the feasibility of operation and how it is to be approached. In a well oriented medical center the *esprit de corps* is so good that the steps flow naturally one into the other. Every good surgeon and anesthetist recognizes the value of the opinions of the clinical cardiologist and clinical physiologist in the handling of cardiac cases surgically, and consequently listens very carefully to the views they express. Judgments in this field are not one-man but team judgments.

Now I should like to turn to the more mundane aspect of my assignment. In preparing for this I have reviewed the work of my associates and myself on hemodynamics which goes back four decades, starting with my association with Dr. C. J. Wiggers. I have consulted with my associates, Drs. Earl Silber and Aaron Shaffer, who are, respectively, the clinical cardiologist and clinical physiologist most closely connected with cardiac surgery at Michael Reese, and with Dr. J. St. Ville of the departments of Surgery and Surgical Research, who is a young, enthusiastic and well trained cardiac surgeon. I have leaned heavily upon them for the practical aspects of this subject but wish to absolve them from any responsibility for what I say. I have also made use of an excellent summary of the subject of "Extracorporeal Maintenance of Circulation and Respiration," written by a surgeon.* I have also had the opportunity of reading the advanced text of a forthcoming book on heart-lung machines by P. M. Galletti and G. A. Brecher to be published shortly by Grune and Stratton.

PERHAPS the newest surgical approach is the implantation of an artificial cardiac pacemaker to maintain the heartbeat when the natural pacemakers of the heart do not function properly. The gadgetry is still being improved to permit a longer period of duty of the implanted pacemaker—less breaking of the wiring, less tissue reaction to the imbedded cardiac electrodes, and the initiation of ways of varying the rate of the pacemaker to imitate the normal variations occurring with bodily stress and exercise. The intent of such an operation is to provide for the rhythmic pumping of the heart in accord with body needs, and secondarily to reduce the frequency of those unwanted detrimental ectopic pacemaker disorders which accompany primary pacemaker failure.

The use of partial heart-lung by-pass to relieve central volume or right sided engorgement, or to sustain an incompetent heart, is a field of great promise but not yet suitable for ordinary use particularly since prolonged employment of a by-pass, over hours, carries with it certain risks associated with trauma to the perfused blood. It seems to me that the use of intermittent pumping of the extremities or abdomen with pressures above the arterial, in which the compression phase coincides with the heart's diastole and the decompression phase with its systole, has not been developed to its full potential. This avoids the use of an open artificial circulation. Its aim is to increase the diastolic pressure in the aorta without increasing the systolic pressure. This leads to an increased coronary flow without augmenting the systolic load and work of the heart. This means of augmenting coronary flow might prove useful when coronary flow is so defective as to limit the availability of oxygen and substrates to the heart to the extent that it handicaps the heart's performance. However, there are two unwanted effects of this external pumping maneuver:

1. It tends to increase the venous return and so might increase right heart engorgement—an un-

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*Clowes, G. H. A., Jr., Physiological Reviews, 40:826-919, 1960.

desirable effect in patients with an already engorged heart, but valuable in patients with shock.

2. It tends to increase the resistance to ejection from the heart, unless the phasing is so accurately timed as to avoid having the compression phase encroach on the ejection phase of the heart, thereby increasing its oxygen consumption and in this way neutralizing the desired benefit of the expected coronary flow increase.

Obviously much more work is still needed in this broad area.

CARDIAC operations are employed to relieve the throttling of the pumping chambers which occurs in *concretio cordis* or constrictive pericarditis. Here the defect is one that limits filling of the heart, primarily by preventing the full expansion of the ventricles during diastole. The associated impaired output and circulatory congestion are well-known and the results of proper surgical operation, which means complete enough freeing of the two ventricles from the pericardial restraint, are striking indeed.

Recently, another mechanical defect has been subject to surgical correction—namely, ventricular aneurysm. Operation should be limited to large pulsating aneurysms which by their systolic expansion take up so much blood of the contracting left ventricle as to either restrict the stroke output of the heart or, more often, make the heart's performance less effective. In a sense such a large pulsating aneurysm acts like a mitral regurgitation in that some of the ventricular contraction is dissipated in expanding the aneurysm. It appears to me that operation should be undertaken only (1) when the cardiac status will permit it and (2) when it is clear that the aneurysm is large and expansile enough to seriously handicap the heart. Obviously, time must elapse after recent infarction before such an operation can be undertaken, and a dynamic rather than a static estimate of the effect of the aneurysm must be made by fluoroscopy or angiocardiography to determine the amount of uptake of the aneurysm during systole.

Just a word about operation for hypertensive heart disease. The medical management of hypertension has improved so much that operations upon the adrenal glands are not indicated except for the removal of a pheochromocytoma or a cortical tumor. For the same reason sympathectomy is only rarely required. However, it has become clearer that unilateral extrarenal occlusion of the renal blood supply is more common than expected and may represent a correctible form of actual or incipient heart disease. The methods of diagnosis and of surgical treatment of such conditions have greatly improved. The only question that needs to be decided in each case is whether the interference with the renal blood flow is the cause of the hypertension or whether the high blood pressure is a sequel of other causes or is primary hypertension. This is a matter of judgment and as experience grows such judgments will become more and more accurate.

A GREAT deal has been written about surgical correction of ischemic heart disease but thus far none of the procedures suggested has proven of any greater value than the established procedure of abrasion and poudrage of the pericardium. There has been considerable heat in this area but not a great deal of light yet. It seems to me that all of us should view reports of spectacular improvement of such patients after operation with considerable skepticism. I need only remind you of the excitement in the early days of internal mammary artery operations for this condition. This, as you know, has been shown to be without real effect. This skeptical attitude does not mean that new surgical approaches should not be explored; rather, it suggests that such new operations need thorough testing before they are accepted. Novelty alone is not enough.

The major areas of cardiac operations today, however, are in correcting disabling acquired valvular defects and in the alleviation of disturbing congenital lesions. Not all such cases are suitable for operation. Some require open-heart operation and others require hypothermia with or without partial or complete by-pass. In some cases prosthetic devices have been employed, but while some major advances have been made in this field, the ideal prosthesis has not yet been found and tested for long-time replacement of incompetent valves. I, myself, am most impressed with the ball valve of Starr recently tested on man at the University of Oregon.

In these two major groups of lesions—congenital deformities and acquired valvular distortion—we deal primarily with obstructions, shunts or a combination of the two. The aim of operation is to improve the performance of the heart by lessening the loss of power which results from such obstructions or by decreasing the high cost of maintaining an adequate circulation which shunts induce. In the case of right to left shunts there is the possibility of overcoming the ill effects of chronic arterial hypoxemia.

Today, closed heart procedures are adequate for correction of a ductus arteriosus, coarctation or uncomplicated mitral stenosis. "Closed" operations are employed also for banding of the pulmonary artery in ventricular septal defects and for palliation of tetralogy of Fallot, tricuspid atresia and complete transposition.

External hypothermia with obstruction of the inflow to the heart can be used when it is deemed necessary to open the heart to correct the simpler cases of atrial septal defects, pulmonary valvular stenosis and aortic stenosis. It is safe to carry hypothermia down to 30° C., but the time for inflow occlusion is limited to periods of 10 minutes each.

Open-heart operation with complete by-pass permits more protracted procedures—up to two hours. This may be done, without stopping the heart, in some of the more complicated cases of atrial septal defect and for pulmonary valvular stenosis and aortic valve stenosis. If the aorta is opened, there is need to provide for coronary perfusion. Recently, it has been found that some protracted procedures, such as for ventricular septal defect and tetralogy of Fallot, can be done better with the heart arrested. This is now best accomplished by combining hypothermia and the use of a heat exchanger with cross-clamping of the aorta. The temperature is lowered as far down as 10° C. to reduce the metabolism of the heart, brain and other vital organs, thereby reducing the organ flow required to maintain viability. This procedure can be employed safely for two hours or even longer.

WHILE open-heart operation gives the surgeon better visibility, it should be reemphasized that even so his vision is limited to the field explored. He does not have a view of the entire heart. It is therefore vital in considering a patient for such operation, to have the diagnosis as exact as possible, with alternative diagnoses and possible complications that might be encountered clearly presented at the preoperative staffing with the surgeon. Failure to do this adequately is as responsible as any anesthetic, surgical or heart-lung technical errors, for some of the poor results obtained. Only poor judgment as to what lesions can and what cannot be operated upon exceeds such poor communication as a cause for poor surgical results. I am, of course, excluding from consideration a poorly trained team, since they should not undertake such procedures.

One other thing which needs to be noted in this connection is that severe pulmonary hypertension is a contra-indication for operations to correct those congenital anomalies which are associated with the hypertension. Patients with severe pulmonary hypertension on whom such operations were done did poorly. Apparently in them the right-to-left shunt is a sort of safety valve for the right ventricle. When it is closed, the right ventricle seems unable to cope adequately with the high vascular resistance in the lungs.

Banding of the pulmonary artery is used in cases of large ventricular septal defects in infants to decrease the left to right flow and to reduce the ill effects of the long continued excessive pulmonary flow upon the lung blood vessels. It also tends to cause hypertrophy of the right ventricle, which improves its performance in propelling blood into the pulmonary vascular bed should it be possible to close the septal defect at a later date.

IT has been apparent from the foregoing discussion that real advances have come about from the development of the extracorporeal circulation and heat exchanger. These have permitted better visualization, a drier field and a longer time for corrective operations. It is not my purpose to go into the detailed physiological aspects of the application of these new tools. I shall confine myself only to a few general remarks. In the case of the heart-lung machine it is important to maintain an adequate flow of blood to the organs perfused, in order to avoid their deterioration and to prevent metabolic acidosis. By use of hypothermia, the need for blood flow is reduced as the metabolism of the organs is lowered. It is also important to be sure that the ventilation of the lungs is decreased during by-pass so as to prevent lung damage. The anesthetist and other aides of the surgeon should be constantly monitoring for these possible complications.

One of the important considerations in undertaking open-heart operations is to have a complete profile of the clotting mechanism preoperatively. If this is done routinely in every case, unexpected blood clotting derangements which complicate operations will be reduced to a minimum. However, this is not the whole story. Some complications will develop from the manner of administering the heparin to make the blood non-coagulable and administering the protamine given afterwards to neutralize the heparin effects. Complications may also come about from the improper collection of blood, from the use of old blood or from excessive hemolysis of red blood cells during the by-pass.

I believe that all who deal with cardiac operations should have in mind the basic physiology of the performance of the heart. This subject is one with which I have been concerned for a good many years.

The heart is a muscle which is constantly active, repeatedly going through its cycle of systole and diastole. It has a very small oxygen debt capacity, hence must restore itself completely during diastole. Otherwise, it will fail. Reducing its work, stopping its beat or reducing its temperature are the means by which, in cardiac operations, the demands on its recovery processes are lessened. This is a matter of prime concern in successful operations upon the heart.

The heart is a compression pump. During its systole the ventricular walls compress the blood contained in its chamber—the work being done *by* the heart muscle. During diastole, the entering blood expands the ventricular chamber—the work being done *upon* the heart. Recently, it has been shown that during diastole work is done by the ventricular walls in sucking in blood—but this is so tiny in amount that it may be ignored. The compression work of the heart is not the same as the external work done by the heart in expelling blood from its chambers into the aorta and pulmonary artery. The latter, the *external useful* work of the heart, is calculated from the pressure imposed upon the blood expelled (and from the velocity imparted to it) during ejection.

The heart accomplishes its work by a series of chemical changes ultimately involving the consumption of oxygen and the production of carbon dioxide. Considerable knowledge has recently been gained concerning the mitochondria—the chemical factories—and how they operate. This is an area I will not consider. Suffice it to say that by a series of events the tension of the ventricle is made to increase during systole in a characteristic fashion, only to be dissipated during diastole. The pressure in the heart cavity at any moment is roughly equal to the average centripetally oriented component of wall tension divided by the surface area of the heart cavity. The larger the heart is, the smaller is the pressure created in its cavity by a given wall tension. The disadvantage of a large heart and the advantage of a small heart on this basis are quite apparent.

The relaxed ventricle is in a different state than the contracted one. In the relaxed ventricle the pressure in its cavity is close to zero at small volumes and rises little as the heart size increases until rather large volumes are reached. In the contracted ventricle, changes in volume have great effects on its cavity pressure until a peak is reached. These two curves that relate pressure to volume I have called the diastolic and systolic tone of the ventricle. It is much easier to change the systolic tone than the diastolic. It is on systolic tone that the inotropic agents chiefly operate. By so doing they alter the amount of the systolic residue of the heart and the magnitude of the stroke volume. It has been clearly demonstrated that the heart does not empty itself completely in systole. Actually its volume at the end of systole is about half that at the end of diastole. The heart, therefore, can modify its output not only by varying its diastolic size but also its systolic size. This has been overlooked until recently because of the overemphasis on the Starling effect, which depends on diastolic size.

In beat-to-beat adjustments of the heart output, its systolic residue can be called upon, in addition to the blood in the atria, central veins and lungs, to provide a quick means of meeting demands for increased blood flow. It is here that the sympathetic nervous system and the catecholamines come into play.

The task of the heart is to maintain the flow of blood in the systemic circuit in tune with needs. Failure to do so results in circulatory insufficiency and, if not corrected, leads quickly to death with or without a state of shock intervening. Normally the heart is so attuned that it pumps out, over any extended period, as much blood as it receives. Several servomechanisms are involved in this adjustment. One of the most important is the end-diastolic volume of the ventricle, which in turn is determined by (1) the systolic residue in the ventricle, (2) the diastolic tone, (3) the time available for filling, and (4) the mean filling pressure gradient.

Besides end-diastolic volume, however, the stroke output may be varied by independent changes in systolic residue which is one of the ways in which neuro-humoral factors operate. These factors are as important as end-diastolic volume in adjusting stroke output. The minute output of the heart can be changed also by altering the heart rate. It turns out that heart rate is as significant as stroke output in determining minute output. Under many circumstances heart rate is the primary means of adjustments in minute output.

The heart is an organ built to adjust its activity to load. There are four ways by which it can do this: by dilatation, by tachycardia, by augmentation of its contractile power and, when the load is chronically maintained, by hypertrophy. Each of these has limits and when the limits are exceeded the pump deteriorates and a vicious mechanism sets in which can lead to death unless the load can be decreased. Operation upon the heart is undertaken, in the last analysis, to lessen load and thereby to avoid, or at least defer, the time when the reserves for compensation are exhausted. Actually, calling on the compensatory reserves makes the heart more limited in its ability to meet stressful situations, and sometimes operation is indicated to enlarge its reserve capacity in the sense used here.

The ultimate source of the energy by which the heart does its work is oxygen. The details of the links by which these are connected are not entirely known. One fact stands out that the heart has a low mechanical efficiency in that only 10 to 15 per cent of the energy supplied by oxygen appears as useful external work. In fact, we have found that a heart doing little or no external work has an oxygen consumption of the same order as one which is pumping normally. Apparently the heart is geared to maintain its pumping action in tune with needs and not to do this with the maximum efficiency.

The low efficiency of the heart means, it seems to me, that we should be concerned with the oxygen cost of the work under different circumstances, particularly since the heart has so limited an oxygen debt.

Our studies have shown that of the three variables ordinarily considered—namely heart rate, peripheral resistance against which the heart works and the amount of its venous return—only heart rate and systolic load (arterial blood pressure) determine the oxygen consumption of the heart. The diastolic load (the rate of venous return) has no effect independent of the changes it induces in heart rate and arterial blood pressure. The oxygen cost of a given amount of external work is therefore increased when the arterial blood pressure or heart rate are elevated but not when only the cardiac minute output is increased. Further, the oxygen cost of a given amount of external stroke work is higher when the blood pressure is high and the stroke output is low than when the reverse is the case.

ACTUALLY a large series of experiments in dogs has shown that product of heart rate and arterial blood pressure (the HR•BP index) correlates with oxygen cost to the heart remarkably well over a wide range of conditions, namely blood pressures of from 50 to 180 mm. of mercury, heart rates of from 30 to 180 beats per minute and cardiac output of from 0.5 to 2 liters per minute. It applies also over a wide range of blood oxygen, carbon dioxide and hydrogen ion content and in hypothermia down to 27° C. So far, only extreme hypoxemia, catecholamine exhibition and undue stress modify the relationship of the cardiac oxygen consumption to the HR•BP index, suggesting that some change has occurred in the meshing of the heart's performance.

This relation of cardiac oxygen consumption to the HR•BP index is far more important biologically in understanding impairment of the heart before, during and after cardiac operations than is the mechanical efficiency with which the heart performs its external useful work. The HR•BP index gives a good idea to the surgeon and his team of what the heart's oxygen requirements are from moment to moment. And this information is derived simply by monitoring the heart rate and the mean systemic and pulmonary arterial pressures. When there is stenosis of the egress of ventricular blood, this must be added to the blood pressure in order to give the total resistance load. It follows from this that cardiac output *per se* is of no great moment.

The HR•BP index is only a crude approach to the stroke-tension created by the heart. A much better index is the so-called tension-time index of Sarnoff and his associates, but even this is a pressure index, not an index of the tension created by the heart. Ultimately some factors taking heart volume into account must be worked out to improve the effort index. Nevertheless, for ordinary clinical purposes the HR•BP index is good enough.

The oxygen needs of the heart are met in two ways: (1) by the rate of coronary flow and (2) by the amount of oxygen removed from each unit of blood flowing past the heart muscle, the coronary arteriovenous oxygen difference. The heart is an organ that extracts a greater per cent of the blood oxygen than most organs, some 14 volumes per cent, so that the amount in the coronary veins is around seven volumes per cent. It would seem, therefore, that changing oxygen needs would be adjusted more by changes in coronary flow than by changes in coronary arteriovenous oxygen difference. Our work has shown clearly that this is the case. Over a variety of circumstances, coronary flow varies directly with cardiac oxygen consumption, and coronary arteriovenous difference and coronary venous oxygen content remain fairly constant. This is a beautiful homeostatic mechanism which is metabolic in character. Coronary flow is so finely attuned to the oxygen needs of the heart that it keeps the oxygen available to the heart almost precisely in line with its needs.

IT is the need for oxygen that affects coronary flow, not the other way around. In ordinary circumstances, changes in coronary flow induced by other means have no effect on cardiac oxygen consumption. All they do is to alter the oxygen extraction and the level of coronary venous oxygen. However, when coronary flow is excessively slow a dependency of cardiac oxygen consumption upon coronary flow becomes manifest, changes in the latter causing parallel changes in the former. In these circumstances, it can be shown that accompanying the change in the cardiac oxygen consumption are parallel changes in the performance of the heart.

In short, there are two ranges of coronary flow:

1. Slow coronary flow, in which the rate of coronary flow determines the performance of the heart through its oxygen use. This can be called a pathological state of significant coronary insufficiency. Years ago we demonstrated that following such a period of coronary insufficiency, a period of reactive hyperemia sets in that more than compensates for the deficiency in coronary flow.

2. Adequate coronary flow, in which induced changes in coronary flow have no effect on the car-

diac performance or oxygen consumption. This range can be called *luxus* flow. When the coronary flow is in the luxus range, its rate of flow is determined by the rate at which oxygen is used by the heart. This metabolic adjustment of coronary flow is so powerful as to obscure other influences modifying coronary flow.

However, in our work we were able to show that variations in the intravascular and extravascular forces acting upon the coronary vasculature can be made manifest. Elevation of arterial pressure, for example, can cause the coronary flow to increase more than the cardiac oxygen consumption so that the coronary venous oxygen rises.

In hypoxemia we were able to show that coronary flow rose even when the cardiac oxygen consumption did not change. Even though the coronary arteriovenous oxygen difference and venous oxygen content fell in such cases, the per cent of oxygen extracted from the blood remained constant. Apparently the homeostatic mechanism here is to maintain per cent oxygen extraction constant.

CATECHOLAMINES, hypercapnia and acidemia, we found, also augment coronary flow at any given level of cardiac oxygen consumption. This suggests a direct effect upon the coronary vasculature independent of the metabolic control. A similar augmentation of coronary flow, independent of the metabolic mechanism, sometimes occurs when the heart's effort becomes excessive. This we have called a "stress-adapting mechanism."

What the exact mechanisms may be of altering coronary flow by these several means has not been worked out. However, it is significant that ordinarily coronary flow is dominated by the metabolic mechanism so that its rate is determined by the oxygen need of the heart. This is a beautiful example of autoregulation of blood flow. This adjustment of coronary flow to the oxygen needs of the heart is paramount and is usually far more powerful than mechanical and the other vasomotor factors.

From this discussion of coronary flow it follows that the significance of viewing coronary flow by itself without regard to the oxygen needs of the heart is fraught with the danger of leaving one with a misconception. It may be stated categorically that in evaluating the benefit of any drug or procedure upon the coronary flow rate, the change must be related to the effect upon cardiac oxygen consumption. Only those drugs or procedures that improve coronary flow alone or at least out of proportion to their augmenting effect on oxygen consumption can be considered to be primary coronary vasodilators. Only when the coronary flow is pathologically reduced so that it becomes the limiting factor of cardiac oxygen consumption and performance can any procedure or drug which increases coronary flow be considered beneficial since the aim here is to augment the oxygen consumption and to improve the heart's performance.

All these facts about the performance of the heart, its oxygen needs and its coronary flow, which I have presented in a rather sketchy manner, have value in cardiac operations as they are done today. The mastery of these facts—expanded and refined as I am sure they can be if more of the persons concerned with cardiac surgery will undertake to test the concepts presented—will place the newer techniques upon a more rational basis. It is in this area that the least amount of work has been performed, doubtlessly because the other aspects of cardiac surgery seemed more pressing. However, the time has come to incorporate knowledge of the heart's performance into the day-by-day handling of patients in need of operations upon the heart.

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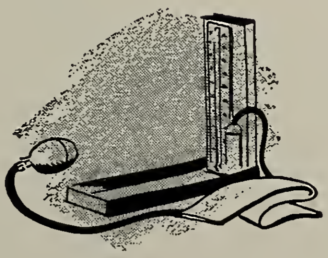

Interstitial Cystitis

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• Interstitial cystitis, a disease of unknown origin which occurs predominantly in women, causes great pain and considerable disability. In most cases, the long interval between onset of symptoms and establishment of the diagnosis is due to a lack of familiarity with the disease.

Although there is no "cure," several forms of therapy may lead to improvement. In a series of 27 patients, 15 received benefit from distention of the bladder through the use of a solution of monoxychlorosene.

AN UNCOMMON urologic condition, interstitial cystitis evokes considerable medical interest because of the severity of the symptoms, the characteristically long interval between onset of symptoms and the diagnosis, and the knowledge that the cause is still unknown. Evaluation of various forms of therapy is exceedingly difficult; nevertheless, improvement in a majority of patients can be obtained by several forms of therapy.

The symptom complex which most commonly differentiates interstitial cystitis from other forms of cystitis is bladder pain that increases as the organ distends, finally reaching excruciating intensity and then abating promptly upon urination. The frequency of micturition and the suprapubic or urethral pain necessitate pronounced curtailment of activities. It is doubtful whether any bladder lesion, with the exceptions of carcinoma and tuberculosis, causes more persistent, more intractable or more severe symptoms than interstitial cystitis.

Although the symptoms may suggest a bacterial infection, the urine is usually "negative" microscopically.

Excretory urography commonly reveals no abnormality of the kidneys or ureters. The bladder, however, may appear contracted and distorted.

If cystoscopic examination is made in the early stages of the disease, slightly raised areas of erythema are visible on the posterior wall and dome. As the lesions progress, the erythematous areas may become confluent. Occasionally the epithelium will thicken through an increase in the number of cells near the area most intensely afflicted, and a small amount of exudate may be present. Actual ulceration is rarely seen.

Histologically, the cell patterns of interstitial cystitis are far from uniform. The epithelium may be metaplastic or atrophic. An edematous stroma with round cell infiltration is commonly found beneath the epithelium. Varying degrees of hypertrophy and fibrosis and even deposition of calcium salts may appear in the smooth muscle. A paucity of capillary vessels is characteristic of the interstitial fibrous tissue. Occasionally the lymphatic channels are more prominent than in the normal bladder. Simmons[1] demonstrated an increased number of mast cells between the muscle fibers in interstitial cystitis. Other investigators have noted that the exudate contains a large number of basophiles, as does the exudate in ulcerative colitis.

From an historical point of view, the information on interstitial cystitis indicates a lack of knowledge concerning its etiology. With each succeeding medical generation, new causative factors are postulated and new forms of therapy proposed. "Foci of infection," bladder neurosis, bladder myositis and allergic sensitivity of the bladder have been implicated, as well as unwashed bodies, irregular menstruation and improper catheterization. Neisserian, acid-fast and spirochetal infections have also been incriminated. Impaired circulation of blood, lymph, and hormones has also been blamed. As yet, the exact nature of interstitial cystitis is unknown.

Equally perplexing is the exceeding difficulty of evaluating the effectiveness of various forms of therapy: the many vagaries of the disease plus the psychoneurotic personality commonly encountered in patients with interstitial cystitis compound a clinician's analytical appraisal.

Forceful distention of the bladder under anesthesia, irrigation of the bladder with increasingly strong solutions of silver nitrate, and, more recently, anti-inflammatory agents such as cortisone and hydrocortisone appear, however, to be helpful. The use of monoxychlorosene (Clorpactin®), which releases free chlorine in solution, has resulted in relief of longer duration.

The experimental work by Warres[2] suggested that any procedure causing reactive hyperemia in the various layers of the bladder will lessen the discomfort of interstitial cystitis.

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The symptoms may warrant urinary diversion in an occasional patient when the disease has been of long standing and fibrosis has made the bladder indistensible.

PROCEDURE

Once a diagnosis of interstitial cystitis has been made, the bladder can be forcefully distended with a 0.25 solution of Clorpactin® while the patient is under general anesthesia. This procedure normally causes an exacerbation of symptoms for 48 hours. When the reaction to the chemical and physical trauma subsides, pain and urinary frequency lessen. Subsequent treatment may be carried out as an office procedure. Under topical anesthesia, a Clorpactin® solution of similar concentration is best instilled to the point of slight discomfort and left in the bladder from one to two minutes on three successive occasions.

COMMENT

A diagnosis of interstitial cystitis was established in 27 patients treated by me in the last 15 years. Twenty-three were women and four were men. The average age was 50 years. Thirteen of these patients had had pelvic operations shortly before the appearance of the symptoms of interstitial cystitis. Thirteen had been concomitantly diagnosed as being psychoneurotic. The average interval between onset of the symptoms and the diagnosis was two years. Fifteen of the 27 patients experienced significant improvement through the use of Clorpactin® as herein described.

Analysis of the clinical material in this series corresponds closely with that reported by other clinicians.

Patients are rarely cured of this disease; in most instances they must return at varying intervals for further treatment.

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Scoliosis in Childhood

Treatment Utilizing Risser Casts and Posterior Spinal Arthrodesis

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• In dealing with scoliosis in childhood, carefully kept records and periodic examinations will establish the trend of the deformity. A decision can be made as to whether the curve will progress or stabilize. Conservative treatment in some cases results in a well-balanced trunk with acceptable cosmetic appearance.

Increasing scoliosis can be prevented by forceful correction and spinal fusion. Pseudarthrosis is the most common reason for loss of correction. Roentgenograms are not totally reliable in determining the intactness of the fusion mass. Surgical exploration and repair should be done if there is any doubt as to the presence of a mature, solid graft.

Following the establishment of a solid graft, trunk support should be continued in young patients whose vertebral growth is not complete.

A RENEWAL OF INTEREST in surgical therapy of scoliosis has reemphasized the different methods for treating this deformity. Investigators who have worked on the problems of cause and treatment do not agree either as to how scoliosis is caused or how to treat the deformity. The lack of agreement may confuse physicians who treat scoliosis only occasionally.

Reports of experimental studies concerned with the cause are not numerous in the literature, but there are a number of reports of results of treated and untreated series. These reports have variously expressed enthusiasm for plaster casts used in various ways, for frames, braces, corsets, special beds, exercises, bone grafting operations and, recently, for corrective metal appliances implanted and attached to the spine.

The authors' experience with the treatment of scoliosis has been concerned chiefly with use of the localizer cast described by Risser and with posterior spinal arthrodesis. For a time we used the turnbuckle hinged jacket and a bent holding cast following arthrodesis. Seeking better corrections, we next tried correcting curvature of the spine in the fish net suspension described by Le Mesurier. Either of these methods can be utilized to correct a single curve, but great care must be taken that the pull of muscles along the spine is not out of balance after the correction of the major curve. Both of these methods of correction were discarded by us when the Risser localizer cast was described and the frame became available. This method of correction of the curvature is not wholly effective in all forms of scoliosis or in all cases.

Conservative Treatment

For early cases in which non-surgical, conservative treatment is to be carried out for a trial period we use the application of the corrective localizer cast until a decision can be made as to whether the curve is becoming stabilized or is progressing toward more deformity. Not all scoliosis deformities progress. Cobb[2] expressed the opinion that only 5 per cent of patients with idiopathic and 50 per cent of those with paralytic scoliosis need correction and fusion of the spine. Moe,[4] however, said: "In the patients seen on the Scoliosis Service of the Gillette Hospital, probably more than 75 per cent of the idiopathic curvatures were cosmetically deforming, with a curve of 50 degrees or more. Correction was felt desirable and necessary in a high percentage of patients seen. Spines were eventually fused in nearly all of the patients with paralytic scoliosis referred to the Scoliosis Service because of a severe progressive curve." In our experience, flexible curves which can be over-corrected, and curves of less than 25 or 30 degrees, may be treated by correction in a localizer cast until one can determine whether progression will or will not occur, or until vertebral growth is complete. We apply snug localizer casts and allow the patient to be ambulatory. The plaster is changed at approximately three-month intervals, with x-ray studies carried out with the patient out of plaster at each change. A Milwaukee brace may be equally effective when applied by physicians competent in its use. If progression of the curvature is noted, surgical treatment is recommended without delay.

The trial of conservative treatment entails accurate record-keeping. These records include a measurement of the total height of the patient, as well as the sitting height and length of the lower extremities, photographs of the patient erect as well as posterior views in the bent forward position, x-ray films of the entire spine with the patient erect and supine. In some instances, lateral bending views are kept as a record of the flexibility of the spine. When viewing serial x-ray films, we have found it important to review them as a group, placed in order, on a multiple-frame view-box. In this way subtle changes may be seen that might not be noted on viewing the films individually.

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The Risser cast is applied with the patient lightly sedated and with an empty stomach. Thin felt pads placed over the bony prominences are the only soft dressing applied, other than tube stockinette. After the cast has dried and has been trimmed, x-ray films are made with the patient in the erect and the supine positions. The holding loss is usually less than 10 degrees in the erect films, and this is usually found in the more flexible lumbar spine.

When operation is to be done, selection of the fusion area and measurement of the curve are based on the method described by Ferguson and by Risser. The curve begins at each end with the vertebra which is least rotated and nearest to being in neither one curve nor the other, and the vertebra which is most rotated is selected as the apex. The centers of the bodies of these three vertebrae are marked, and pencil lines are drawn through these points to form the angle of the curve. The angle of the curve is the divergence of these two lines from 180 degrees.

The plaster cast is removed before operation. Metal markers over an identifiable spinous process are attached to the skin, and an x-ray film with the patient prone is made.

A Hibbs type subperiosteal dissection is used, with excision of articular facets and packing of the facet defect with bone plugs. Then bone flaps are developed from the base of the transverse processes, and pedicles, laminae and spinous processes are imbricated over the facets and interlaminar spaces. Autogenous bone is frequently needed in the thoracolumbar area. The spinal fusion is often carried out in two stages. Occasionally we have been able to accomplish the entire fusion in a single stage. After the wound heals, a cast is again applied to immobilize the area of fusion. In cases treated in this manner no significant loss of correction was noted in comparison of x-ray films taken before and after operation. The patient is kept at bed rest, in plaster, for three months after operation. The plaster is then removed, and x-ray films are made in the supine position, including anteroposterior as well as oblique views of the fusion area, to evaluate the progression of the fusion. After application of the second postoperative cast, the patient may be allowed to be up if the angle of the curve with the patient standing is not a departure of more than 10 degrees from the angle in the supine view.

At the end of the sixth postoperative month, the plaster is removed and x-ray films are made again. If delay of the fusion is obvious or suspected, exploration of the graft is done and reinforcement with fresh autogenous bone or local bone is added to the unhealed areas. The iliac crest is the most frequent donor site. A cast is then applied as before and is kept on for three months. At the end of the nine-month postoperative period, the graft is again evaluated. If it is mature and solid, immobilization is discontinued. We have found it advisable to use a removable, axillary-high, plastic jacket as additional protection in young children and in other patients whose vertebral growth is not complete. This will be discussed later.

Causes of Pseudarthrosis

Pseudarthrosis is of relatively high incidence in patients with severe deformity. The more severe the lateral deviation from the midline, the greater the angular force on the curve and, therefore, the more chance for pseudarthrosis. In most cases pseudarthrosis affects the thoracolumbar area, which is also the most mobile segment. There is a high incidence of pseudarthrosis following fusion for scoliosis caused by poliomyelitis. In such cases the curve is usually longer, involving more spinal segments, and the muscle imbalance produces more deviation of the trunk than is usual in idiopathic scoliosis. Blount, however, reported a higher incidence of pseudarthrosis in patients with idiopathic curvature (48.6 per cent) than in those with paralytic curvature (33.3 per cent).

We believe that immobilization plays a significant part in securing solid arthrodesis, and in some cases immobilization is hard to maintain with a cast if the patient is ambulatory. Comparing x-ray films in the erect position with films in the supine position, we noted that the correction was usually maintained in cases of thoracic curvature but was almost always diminished somewhat in cases of lumbar curve. Since we have been unable to prevent this loss of correction by snug application of the plaster, we believe it is best to keep patients with lumbar scoliosis horizontal in plaster.

Excision of the articular facets has been reported as a cause of increased mobility, with consequent greater risk of pseudarthrosis. Therefore we turn the cephalad facet articulation with a gouge, thus completely exposing the caudad articular facet for curettement, and the defect created is then packed with a graft turned up from the base of the mammillary process. Interdigitated bone flaps from the pedicles, laminae and spinous processes bridge the joints. Autogenous bone is sometimes required for adequate graft material in the thoracolumbar region. Blount recommended autogenous iliac bone addition in all fusions below thoracic eleven.

Bone bank bone was used enthusiastically by us until, upon critical inspection, we began noting excessive fibrosis of the tissue overlying the area of fusion. The fusion masses were thick and sclerotic and were relatively less vascular. Further, it was found that repair of pseudarthrosis in these cases became more difficult. In one case, unable to eliminate pseudarthrosis by the addition of more bone, we removed the fusion mass and regrafted autogenous iliac bone. In most cases solid arthrodesis was ultimately brought about. In three cases in which attempts at repair of pseudarthrosis failed repeatedly, union was at last achieved by interbody fusion. The curve was in the lumbar area in all these cases.

Loss of Correction

The most obvious cause of immediate loss of correction was inadequate immobilization in the cast. We always extend the casts upward to the occiput and mandible, as advised by Risser. When the sacrum is in the curve, the pelvic obliquity is corrected by extending the cast downward to immobilize one or both lower extremities. In four cases, it was necessary to utilize skeletal traction through the femora, incorporating it in the cast, in order to wedge a pelvic obliquity and a fixed lumbar curve. In these four cases the condition being treated was paralytic scoliosis and the fusion should have included the sacrum. The obliquity promptly recurred, and the fusion had to be extended downward into the sacrum to control the deformity. We also found it necessary in some cases of fixed pelvic obliquity to resect Lowman fascial transplants on the concave side of the abdomen before the deformity could be corrected.

Another cause of loss of correction is not fusing a long enough portion of the spine. In such circumstances, increasing curvature usually develops below the fusion area. When that is the case, recorrection and extension of the fusion area downward controls the deformity.

In several reports of large series of cases of scoliosis fusion the incidence of pseudarthrosis was rather high, and we have observed this phenomenon particularly in association with correction of scoliosis in the thoracolumbar area. We have become increasingly insecure in attempting to decide when a fusion is solid. Roentgenograms in the anteroposterior, lateral and oblique planes do not always demonstrate the condition. The greater the deformity present, the more difficult the interpretation of the roentgenogram. We have repeatedly observed pseudarthrosis at surgical operation, after roentgenograms were interpreted as showing solid fusion. Frequently in such cases the area of pseudarthrosis is on the concave side of the fusion mass and inferior to the apex of the curve. Conversely, we have often found solid fusion masses after roentgenograms were interpreted as showing pseudarthrosis because of small clefts extending from the concave border toward the midline, but with a solid graft on the convex side of the curve. Absence of motion at the prospective pseudarthrosis site is not a valid criterion for determining the intactness of the graft. A narrow, irregular defect may not be visible until the graft is decorticated and developed with a small curette.

It has been generally assumed that when a solid fusion mass develops, the spinal deformity is stabilized. However, if the patient is young and vertebral growth is incomplete, the deformity can recur when the cast is removed after fusion. In three cases pseudarthrosis developed and the correction was lost even after solid fusion had taken place. In two of them the defects in the graft were repaired and the deformities that had developed were corrected. Whether these defects in the graft occur because of immaturity or as the result of minute fractures produced by growth of the spine remains unknown at present. Loss of correction of a few degrees may not impair the result provided the loss does not progress. Stabilization of the spinal deformity after adequate fusion occurs because of the arthrodesis and because of completion of the vertebral growth. Whether the mild loss of correction in some cases is due to the immaturity of the graft or to silent pseudarthrosis is not clear. Pseudarthrosis does not always require repair. Risser indicated that, if the loss is mild and vertebral growth is complete and the patient does not have pain in the area of pseudarthrosis, repair may be unnecessary.

Age of Patients

The youngest patient we treated surgically was two years of age. He needed stabilization of the spine for severe trunk weakness secondary to poliomyelitis. Six years after operation, the correction was well maintained, but with mild lordosis in the thoracic area. Up to that time the trunk had not shown significant shortening as the result of the spine fusion. The patient was wearing a plastic, axillary-high, removable jacket to prevent loss of correction.

We expect loss of the normal thoracic rounding and development of mild thoracic lordosis in a very young patient. It is generally accepted that the fusion mass elongates at the expense of the growing intervertebral disc. It is also thought that the graft continues to grow in the area of pseudarthrosis. There has been speculation that microscopic fractures occur in a graft, that growth occurs in these areas during the time of these fractures and that the pieces then unite.

The oldest patient in our series was a girl 18 years of age who required a spinal fusion for a C-curve that had begun developing some two years previously. It was assumed that the curve had been caused by poliomyelitis that had been overlooked. Without treatment, the deformity progressed and became painful. The deformity was corrected and the correction was maintained by spinal arthrodesis.

We do not believe that young age should be a deterrent to surgical treatment of scoliosis, provided the surgeon understands the problem and is confident of his ability.

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Repair of Large Incisional Hernias

A New Anatomical Technique

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• Large upper abdominal incisional hernias have always been a vexing problem to surgeons because of the rigidity of the costal arches.

With the increasing longevity of our population and the constant improvement in ways to sustain older patients during operative procedures, incisional hernias, especially of the upper abdominal area, will undoubtedly become more prevalent.

A new anatomical procedure for repair, which was used in 16 cases, eliminates the necessity of the use of various prosthetic materials: extrapleural sectioning of the costal cartilages from approximately the seventh to the tenth rib permits the directional pull of the attached musculature to narrow the defect, thus allowing repair of the hernia without tension.

The procedure is technically a simple one and postoperative complications are minimal.

WITH INCREASING resort to surgical operation for upper abdominal disease in persons of the older age brackets, in whom wounds are likely to be slow to heal, the incidence of incisional hernia is also rising. The progressive increase in the size of these ventral defects affects pulmonary, cardiac and intra-abdominal function. For "poor risk" patients with a relatively short life expectancy, use of an elastic garment to control the bulge is accepted as an expedient, but for patients in fair to good condition surgical repair is indicated.

Many prosthetic materials have been used in these repairs and the literature is filled with articles extolling the virtues of each.[5,6,7,8] We have used these various materials in the surgical treatment of incisional hernias but operative results have been far from satisfactory.[1] Some of the prosthetic materials caused exudations and collection of serum necessitating repeated aspirations.[2,3] In some cases formation of sinuses made reoperation and removal of these various synthetics necessary, with recurrence of herniation ensuing.

To offset these difficulties, a relatively simple technique was devised which eliminates the need for any prosthetic fabrication in the pair of large, upper abdominal ventral hernias. The primary rule of hernia repair is: Approximate the tissue without tension. To do this, the immobile costal arch in the superior lateral aspect of the incisional hernia must be relaxed. The upward and outward pull of the relatively rigid arch of costal cartilage (Figure 1) puts the lateral and superior portions of the hernia wound, with its retracted tendinous attachments, under constant traction. At the same time, the medial portion of the incisional hernia is being pulled in the exact opposite direction. This creates an untenable situation for repair of a hernia in this area unless one of the vectors can be overcome.

Bearing in mind that the parietal pleura descends only to the eighth intercostal space in the midclavicular line (Figure 2) it will be noted that the portion of the costal arch involved in these hernias can be relaxed with minimal risk of entering the

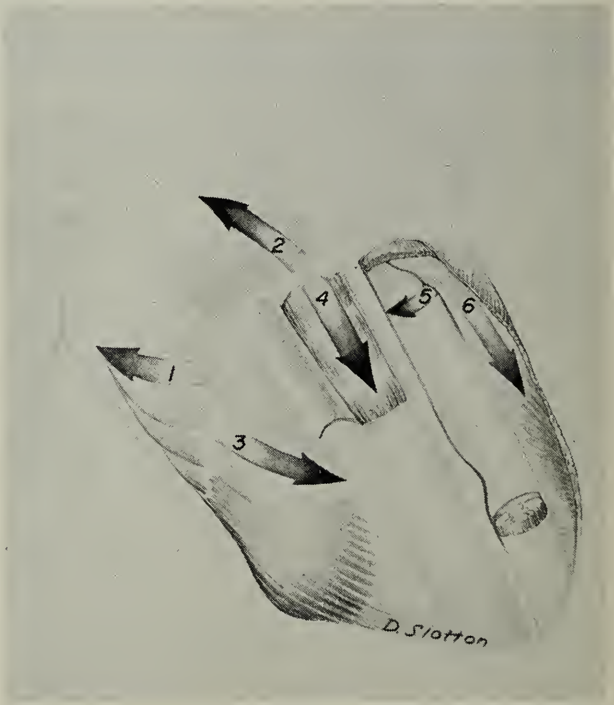

Figure 1.—Upward and outward pull by (1) serratus anticus and (2) pectoralis major. The medial portion is pulled in opposite direction by the external oblique (3) and the rectus abdominus (4). Numbers 5 and 6 show the direction of pull of the transversalis and the internal oblique muscles.

Submitted July 23, 1962.

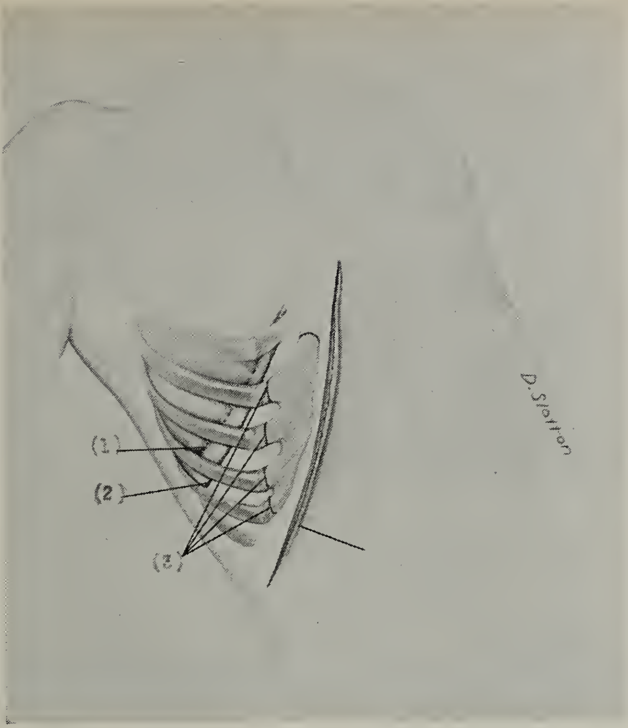

Figure 2.—The lowest point of descension of the visceral pleura is indicated by (1) and the lowest point of parietal pleura by (2). The sites of sectioning of costochondral junctions are shown by lines radiating from (3).

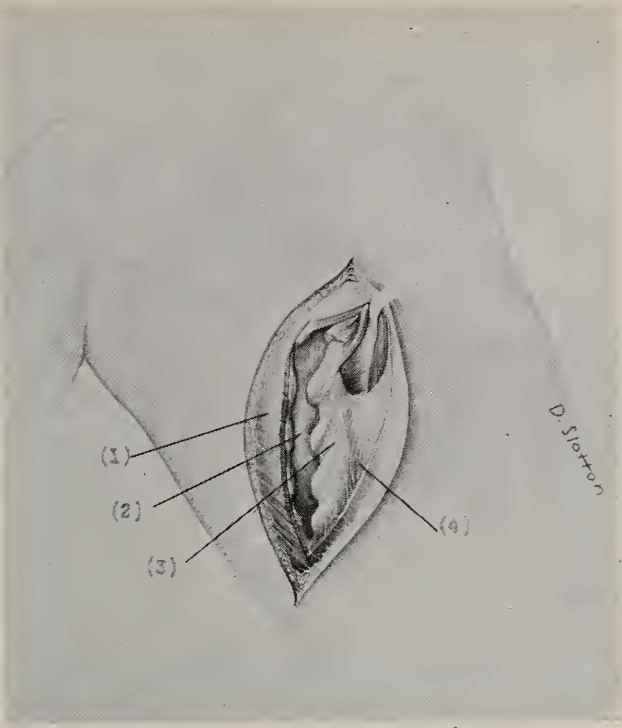

Figure 3.—Showing (1) interdigitations of serratus anticus and the external oblique, (2) underlying diaphragm, (3) severed costal arch, and (4) site of hernia.

pleural cavity. The hernia is approached in routine fashion. The superior lateral flap is undercut to the level of the entire costal arch. The costal arch with its attached musculature once exposed is sectioned at the sites shown in Figure 3. Each costal cartilage, from the seventh to the tenth rib, is severed approximately 2 cm. lateral to its point of fusion, with the seventh rib being sectioned in two places (Figure 2). Once this portion of the costal arch is freed from the upward pull of the pectoralis major and serratus anticus, the lateral superior portion of the hernia can be approximated through the medial flap of the hernia with practically no tension. Severance of the costal arch in this manner exposes the underlying diaphragm, which because of its attachment to the underside of the costal arch tends to add indirectly to the medial directional pull of the freed arch. With the entire costal cage freed completely, the formerly rigid supero-lateral aspect of the wound is practically self-approximating to the medial flap of the hernial defect.

Subsequent steps in the repair of the hernial defect will vary with the individual surgeon. We use wire sutures or cotton sutures and do not use drains unless a large amount of tissue exudation is expected, as it might be if previously placed synthetic material were removed. In obese patients with a thick panniculus, anticipating excessive tissue dissolution we have used small multiple Penrose drains brought out through counter stab incisions. In some cases in which dense scarring from repeated attempts at repair made the formation of tumors of collected serum a hazard, we placed multiply perforated catheters that were brought out through stab wound incisions and attached to a Y tube.[3,4] Continuous suction was applied to the catheters for five days before removal. The wounds were dressed snugly but the bandages were not drawn tight enough to greatly restrict lower thoracic movements. Since the kind of patients who were being treated have a tendency to restrict their respiratory movements due to chest pain, we apply elastic stockings postoperatively to prevent peripheral stasis. After removal of all sutures, drains or catheters, a commercially made elastic rib belt makes a hypersensitive patient more comfortable. What little pain does result from the sectioning of the costal cartilages can easily be controlled with small doses of codeine.

Roentgenograms of the chest are taken immediately postoperatively and then again at five and ten days later to detect any development of atelectasis or accumulation of pleural fluid, which are possibilities owing to the proximity of the operative area to the parietal pleura. Fluoroscopy may be done postoperatively to make sure the diaphragm is freely mobile.

Sixteen patients were operated on with this technique. Herniation did not recur. The longest period of follow-up was ten years; the shortest was more than three years.

The same technique can be used for bilateral section of the costal cartilage in repair of large midline upper abdominal incisional hernias. It can also be used by pediatric surgeons for correction of partial or complete developmental absence of the abdominal wall, as occurs in omphalocele.

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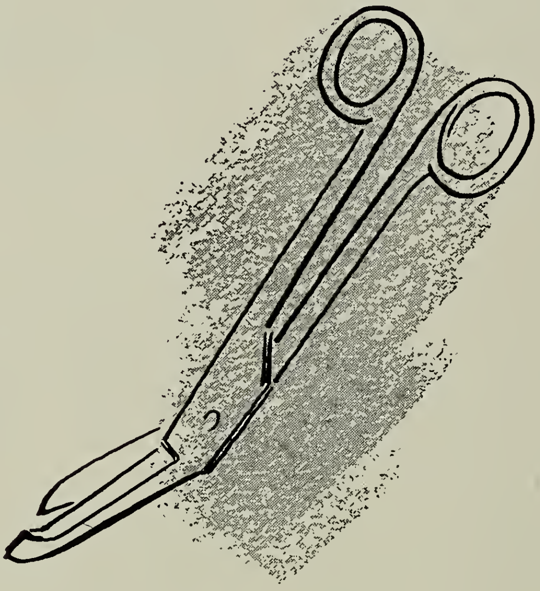

Thrombo-Embolic Phenomena In Severe Asthma

Use of Heparin for Prevention and Treatment in Patients Receiving ACTH or Gluco-steroids

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• Coagulation times and protamine titration values for heparin are apt to be lower than average in patients with allergic disease, particularly asthma. Severe asthma is commonly treated with gluco-corticoids or ACTH. Prolonged high dosage of gluco-corticoids, either endogenous or exogenous, depresses mast cell function and heparin production. Thrombo-embolic phenomena occur frequently in severe cases of asthma so treated, particularly if predisposing vascular disease is present. Heparin can be used to treat and prevent these complications. Adjuvant anti-asthmatic effects under these conditions are noted in addition to the desired anticoagulation.

A TIME honored definition of status asthmaticus is: Prolonged, severe, unremitting and incapacitating wheezing dyspnea resistant to usual methods of treatment. Now, with methods of treatment improved, status asthmaticus is less often seen but the cases that are encountered are more stubborn. In an ever increasing proportion of them adrenocorticotropic hormone (ACTH) or gluco-corticoids are required for relief. The eventual exhibition of all or part of Cushing's syndrome if these agents are given in a large enough dosage or over a long enough period is well documented, but thrombo-embolic phenomena in the same circumstances have not received the attention they deserve.

FREQUENCY AND PREDISPOSING FACTORS

The frequency of thrombo-embolic phenomena (TEP) during ACTH and gluco-corticoid therapy has been noted by several observers[4,7,8] and by the author. Cosgriff and associates set the incidence at 6.3 per cent.[8] The author's overall figures are 6 per cent in patients receiving gluco-corticoid therapy and 9 per cent in those treated with ACTH. Bounameaux and co-workers[7] said that thrombosis during ACTH therapy occurs more often in diseases where there is already damage to vessels, particularly the vascular endothelium, and notably in systemic lupus erythematosus, periarteritis nodosa, arteritis obliterans and Buerger's syndrome. In the author's experience the incidence is also relatively high in patients with pulmonary fibrotic disease and emphysema, which are commonly concomitant with status asthmaticus. Narrowed vascular channels in the lungs and endothelial damage incident to pulmonary hypertension are undoubtedly significant factors. Bedridden patients are already subject to venous stasis, and varicose veins are another predisposing factor. Often, however, it is not possible to distinguish between phlebothrombosis and thrombophlebitis.

The thrombi may be large or small, single or multiple, and either veins or arteries or both can be affected. What proportion release emboli is impossible to estimate, but whether from thrombi or emboli, infarctions do occur. These lesions are often only recognized after ACTH or gluco-corticoid medication is discontinued and the localizing inflammatory reaction no longer suppressed.[5,15]

A survey of asthma cases of varying severity in which the author was sole physician or consultant showed that thrombo-embolic phenomena rarely occurred in patients receiving daily doses below 15 mg. of prednisolone or the equivalent. Ninety per cent occurred after more than 320 units of ACTH gel or 160 mg. of prednisolone (or equivalent gluco-corticoid) were given in the first four days of treatment. Clinically they were never noted before the fifth day of such therapy. This would seem to be a rough guide as to the necessity and timing of prophylactic anticoagulant therapy. A simple laboratory test on the blood itself that would determine when to give such therapy would be desirable. Anticoagulant therapy can be expensive and inconvenient, the orally effective but erratic and slowly acting depressors of prothrombin production requiring constant laboratory observation, and the more predictable rapidly acting heparin necessitating injection.

PATHOLOGIC PHYSIOLOGY

Clinically the thromboses have been associated with shortening of the coagulation time.* This observation has been confirmed experimentally and is

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*References 4, 5, 7, 8, 10, 35.

attributed to direct ACTH-heparin antagonism[18,23,39] and to reduction of mast cell activity by gluco-corticoids.[5] Protamine titration reveals a shortage of heparin or heparinoid substances.[2,3,35,37] The numerous functions of heparin, summarized elsewhere by the author,[16] make many demands upon the endogenous supply ordinarily met adequately by the normal individual. Although the total mass of the heparin-producing mast cells in the body is greater than that of the liver,[5] the endogenous supply of heparin may be rendered temporarily inadequate pathologically or iatrogenically. In the situation under consideration excess endogenous or exogenous gluco-steroids depress mast cell function, and significant amounts of heparin are called upon to form inactive complexes with ACTH and with the ultimate effectors of allergic reactions. Binding of histamine and serotonin by heparin is well documented‡; acetylcholine is probably similarly inactivated. The nonapeptide bradykinin and lipid residue SRS-A, variably released in allergic reactions, are subject to heparin binding, as are also polypeptide permeability and leukotoxic factors.[26,36] These diversions of heparin further reduce the supply available for anticoagulation. The negatively charged heparin is also a necessary component of the intercellular endothelial cement substance; it minimizes and prevents thrombosis by repelling the similarly charged leukocytes and platelets.[25,32] Although heparin normally plays a minor role in maintaining blood fluidity, it assumes relatively more importance in pathologic states. Unnecessarily prolonged use of high doses of ACTH and gluco-corticoids invites trouble. Another common mistake is not giving enough initially to control asthma quickly but so much on prolonged use as to deplete supplies and depress formation of heparin.

LABORATORY METHODS AND CONSIDERATIONS

Practically all clinicians using heparin have employed the (glass tube) Lee-White Coagulation Time (LWCT) or its equivalent as a non-specific guide to therapy. Clotting time, however, is not a measure of circulating heparin or heparinoid substances. Protamine titration, although not strictly specific, is still a useful method for determining the relative amounts of such substances available for anticoagulation; it is not a quantitative measure of circulating heparin.[2,8,37] Experimentally 1.5 mg. of protamine sulphate, a large strongly basic polypeptide composed largely of arginine, neutralizes the anticoagulant properties of 1.0 mg. of acidic heparin,[24] which consists of alternating units of (sulphated?) glucuronic acid and sulphated glucosamine.

The basic steps of the Allen protamine titration method[2] are:

1. Using a solution of 1 mg. protamine (salmine) sulphate per ml., place 0.02, 0.04, 0.06, 0.08, 0.10, 0.12, 0.14, 0.16, 0.18 and 0.20 ml. in a series of ten serology tubes. (This will also correspond to mg. added.)
2. Withdraw 11 ml. of venous blood, add to test tube containing 1 mg. of heparin and invert 15 times. (This blood then contains 0.091 mg. per ml. of added heparin.)
3. Add 1 ml. of the heparinized blood to each of the protamine tubes and shake eight to ten times.
4. Reading—the end-point is the tube containing the least amount of protamine sulphate in which a solid clot forms in one hour at room temperature. According to Allen and his associates this amount is normally 0.14 mg. or above.[2] According to Thomas and Olwin normal values run from 0.12 to 0.18 mg.[37]

Protamine titration is affected by several factors, most of which influence fibrin formation. Among these are: heparin and heparinoid substances, hemophilia, absence of fibrinogen, prothrombin deficiency, and impairment of the conversion of prothrombin to thrombin. It is ordinarily independent of the platelet count.[2]

LABORATORY OBSERVATIONS

An analysis of accumulated data from private and clinic sources on coagulation times (since 1940) and protamine titration values (since 1949) in allergic disorders and in heparin treated patients revealed some interesting information. Prolonged coagulation times and elevated protamine titration values rarely occurred in cases of clinical allergic disease. This phenomenon is practically limited to experimental anaphylaxis in the dog; here the principal shock organ and site of heparin production is the liver,[21] and a direct pathway to the blood stream for the liberated heparin is provided by the thoracic duct.[40] The converse of lower values than average is more apt to be true,[31] particularly in status asthmaticus. The normal range for the Lee-White method as performed by the author and laboratories he uses is 5 to 15 minutes, with 50 per cent of determinations being 9 minutes or below. In 50 per cent of 172 cases of severe incapacitating asthma the Lee-White clotting time (LWCT) was 7 minutes or below. Of 151 such cases, 53 or 35 per cent, had protamine titration values (PTV) below 0.12 mg. Values of 0.16 mg. were uncommon and never was a higher value noted. Allen and co-workers considered normal values to be 0.14 mg. or above.[2] Thomas and Olwin established their normal range at from 0.12 to 0.18 mg.[37]

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‡References 17, 18, 19, 30, 33, 34.

TABLE 1.—*Effects of Large Doses of ACTH or Gluco-Corticoids on Coagulation Times and Protamine Titration Values in 34 Cases of Status Asthmaticus.*

Lee-White Coagulation Time in Minutes		Protamine Titration Value in Mg./Ml.		Therapeutic Agent	Thrombosis or Embolism	Heparin Used For
1st Day	5th Day	1st Day	5th Day			
8	5	.16	.10	ACTH Aqueous	No	Prophylaxis
5	4	.06	.06	Hydrocortisone	Yes	Treatment
10	4	.12	.10	Hydrocortisone	No	Prophylaxis
8	6	.12	.12	Prednisone	No	Not used
4	4	.08	.08	ACTH Aqueous	Yes	Treatment
7	5	.12	.08	ACTH Gel	Yes	Treatment
6	4	.12	.08	Prednisolone	No	Prophylaxis
9	5	.14	.10	Prednisone	Yes	Treatment
6	8	.12	.08	Prednisolone	No	Prophylaxis
4	6	.14	.08	Prednisolone	No	Prophylaxis
8	6	.10	.08	ACTH Gel	Yes	Treatment
8	4	.12	.10	Prednisone	No	Prophylaxis
7	3	.10	.04	Prednisolone	Yes	Treatment
5	6	.10	.08	Prednisolone	No	Prophylaxis
4	2	.10	.10	Prednisolone	No	Prophylaxis
8	8	.10	.06	ACTH Gel	No	Prophylaxis
11	9	.10	.12	Prednisolone	No	Not used
6	6	.10	.08	Triamcinolone	No	Prophylaxis
9	6	.14	.08	Prednisolone	Yes	Treatment
10	5	.12	.08	Prednisolone	No	Prophylaxis
5	3	.10	.10	Triamcinolone	No	Prophylaxis
8	3	.14	.10	Prednisone	No	Prophylaxis
8	4	.12	.12	Prednisolone	No	Prophylaxis
4	2	.10	.08	ACTH Gel	No	Prophylaxis
7	7	.12	.08	Prednisolone	No	Prophylaxis
9	8	.12	.14	Dexamethasone	No	Not used
6	4	.12	.12	Methyl Prednisolone	No	Prophylaxis
8	9	.12	.08	ACTH Gel	No	Prophylaxis
7	3	.14	.12	Dexamethasone	No	Prophylaxis
5	3	.10	.10	Prednisolone	No	Prophylaxis
8	4	.14	.10	ACTH Gel	No	Prophylaxis
6	6	.12	.08	Prednisolone	No	Prophylaxis
9	7	.16	.14	Methyl Prednisolone	No	Not used
7	8	.10	.06	Prednisolone	No	Prophylaxis

Table 1 summarizes the effects of ACTH and gluco-corticoid medication on the LWCT and PTV in 34 cases of status asthmaticus since 1951 in which the author was sole physician or consultant. Determinations were taken before such therapy was instituted and after four days of such treatment. During the interim more than 320 units of ACTH gel or more than 160 mg. of prednisolone (or equivalent gluco-corticoid) were administered. Only cases were included in which continuance of such therapy in large doses was deemed necessary and in which both sets of determinations had been obtained. The series included 34 adults, 22 male and 12 female, ranging from 25 to 67 years of age.

Between the first and fifth days the LWCT went down in 24 instances, stayed the same in five and rose in five. During the same period the PTV was lowered in 24 cases, unchanged in eight and raised in two. Twenty-three of the patients received heparin prophylactically and four received none. Seven had complications requiring heparin administration.

TREATMENT OF THROMBO-EMBOLIC COMPLICATIONS WITH HEPARIN

Thrombo-embolic phenomena occurred in seven cases. In those cases fifth-day PTV ranged from 0.04 mg. to 0.10 mg. and LWCT from 3 minutes to 6 minutes. These seven were actively treated with heparin. Table 2 summarizes the details.

Before therapy six of the seven in this group had average or low normal LWCT and one had below normal range. Three had PTV in the normal range and four below it. After four days of ACTH or gluco-corticoid therapy, four had LWCT in the low normal range and three below normal limits, whereas the PTV was below the accepted normal range in all seven. Thrombus extension and formation of new thrombi were halted immediately when heparin was started and at the same time improvement occurred in the asthma, allowing significantly lower ACTH or gluco-corticoid dosage. The members of this group also had the subnormal blood pressures often found in status asthmaticus. Under heparin therapy the pressure rapidly rose to or toward normal levels. Some of this effect can be attributed to inactivation of hypotensive agents such as histamine,* bradykinin,[26,36] and permeability factors.[26,36] It will be noted that in two of the seven cases a switch was made later to dicumarol anticoagulant therapy. In

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*References 17, 18, 19, 30, 33, 34.

TABLE 2.—*Use of Heparin in Seven Cases of Status Asthmaticus Under Gluco-Corticoid or ACTH Therapy Complicated by Thrombo-Embolic Phenomena*

Age and Sex	Preparation and Daily Dose	Lesions and Day Discovered	Lee-White Coag. Time Before Heparin Started	Protamine Titration Value Before Heparin Started	Heparin Dosage S.C.* Unless Noted I.V.†	Progress After Heparin Initiated
44M	Hydrocortisone Orally 300 mg. 3 days Then 200 mg.	Sudden chest pain on 8th day. Small pulmonary infarct. Left Post. Tibial Vein thrombosis found.	4 min.	0.06 Gm./Liter (0.06 mg./cc.)	225 mg. I.V. 1st d. 100 mg. q8h 3 d. 125 mg. q12h 3 d. Switched to Dicumarol	No further chest pain or thrombi. Hydrocortisone reduced 40 mg. each day. Epinephrine necessary after changing to dicumarol.
57M	ACTH Aqueous Subcutaneously 100 Units	Rt. Dors. Pedis Art. (and possible Rt. Popliteal Art.) occlusion. 5th day.	4 min.	0.08 Gm./Liter (0.08 mg./cc.)	240 mg. I.V. 1st d. 100 mg. q8h. 4 d. 125 mg. q12h. 2 d. 200 mg. 1 x 3 d.	No extension of thrombus. Rapid improvement in circulation. Marked improvement in asthma. Only 20 U. ACTH necessary by 3rd day.
31F	ACTH Gel Subcutaneously 80 Units	Rt. Cephalic Vein & Rt. Great Saphenous Vein Thromboses. 6th day.	5 min.	0.08 Gm./Liter (0.08 mg./cc.)	240 mg. I.V. 1st d. 100 mg. q8h 3 d. 125 mg. q12h 2 d. 200 mg. 1 x 4 d. 100 mg. 1 x 3 d.	Lesions regressed rapidly. Able to reduce ACTH 20 U. each day and discontinued on 5th day. Severity of asthma increased when heparin discontinued.
38M	Prednisone Orally 50 Mg.	Left Femoral Vein and Left Small Saphenous Vein thromboses. 8th day.	5 min.	0.10 Gm./Liter (0.10 mg./cc.)	300 mg. I.V. 1st d. 75 mg. q6h 3 d. 125 mg. q12h 4 d. Switched to Dicumarol	No extension. Subsidence of edema. Down to 10 mg. prednisone by 4th day. Had to be raised to 30 mg. after change to dicumarol.
45F	ACTH Gel Subcutaneously 120 Units	Uterine plexus thrombosis? Pulmonary embolus. 5th day.	6 min.	0.08 Gm./Liter (0.08 mg./cc.)	240 mg. I.V. 2 d 100 mg. q8h 2 d. 125 mg. q12h 4 d. 200 mg. 1 x 2 d. 150 mg. 1x 2 d.	Pelvic pain subsided. Rapid regression of pulmonary shadow. Rapid reduction of ACTH to 20 U. by 5th day. ACTH discontinued 7th day.
53M	Prednisolone Orally 50 Mg.	Rt. Post. Tib. Art. Occlusion & Rt. Femoral Vein thrombosis. Multiple pulmonary shadows. 6th day.	3 min.	0.04 Gm./Liter (0.04 mg./cc.)	240 mg. I.V. 2 d. 150 mg. q12h 3 d. 100 mg. q12h 3 d. 150 mg. 1 x 2 d. 100 mg. 1 x 2 d.	Rapid regression of thrombus & impr. of circ. of foot. Marked improvement in asthma. Prednisolone down to 20 mg. in 3 days and 10 mg. in 8 days.
49F	Prednisolone Orally 50 Mg.	Patient had bilateral varicose veins. Two thrombi found along course of Rt. Great Saph. Vein. 5th day.	6 min.	0.08 Gm./Liter (0.08 mg./cc.)	100 mg. q8h 3 d. 150 mg. q12h 2 d. 100 mg. q12h 3 d. 125 mg. 1 x 2 d. 75 mg. 1x 2 d.	No further thromboses. Rapid improvement in asthma. Prednisolone discontinued by 6th day. Medication necessary again when heparin discontinued.

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*S.C.—Subcutaneous. †I.V.—Intravenous.

these cases it was necessary to increase the dosage of gluco-corticoid after the change was made.

PROPHYLAXIS OF THROMBO-EMBOLIC COMPLICATIONS WITH HEPARIN

In 23 of the cases shown in Table 1 heparin was added prophylactically to the medication on the fifth day. In ten of them there was significant lowering of the LWCT and 13 significantly lowered PTV; in seven both determinations were lowered. No clinically ascertainable thromboses or emboli occurred in this group.

Concentrated aqueous sodium heparin subcutaneously at 4, 6, 8 or 12 hour intervals, depending upon the circumstances, was entirely adequate for prophylaxis. In the majority of cases initial doses of 100 mg. every 8 hours or 150 mg. every 12 hours were satisfactory. The dosage and frequency were reduced as the ACTH or gluco-corticoid requirements lessened. In the author's experience these requirements drop far more rapidly in heparinized than in unheparinized patients. Full heparinization (average LWCT of 20 to 25 minutes) was usually necessary only two or three days. After this time not only was the initial danger of thrombus formation over but the ACTH or gluco-corticoid dosage necessary reduced to a statistically safer level. The dosage and frequency of administration of heparin should be tapered off gradually, not stopped abruptly, in order to avoid rebound phenomena.[11]

In looking over 62 other case records of status asthmaticus to which the author had access and in which equally high dosage of ACTH or gluco-corticoids were used for comparable periods, 14 cases of thrombosis and/or embolism were encountered. In this group of cases, however, the laboratory data were either incomplete or not comparable chronologically. It was noted in this group that six cases using heparin as the anticoagulant required 40 per cent less gluco-corticoid than five cases using dicumarol for this purpose.

DISCUSSION AND CONCLUSIONS

In status asthmaticus treated by ACTH or gluco-corticoids there is an appreciable incidence of thrombo-embolic phenomena, the vast majority occurring at high dosage levels and apparently always after the fourth day of such treatment. An already low clotting time and/or protamine titration value may be lowered to pathologic levels. These low values point toward a deficiency of heparin or heparinoid substances. This deficiency can be largely iatrogenic in origin, for endogenous or exogenous gluco-corticoids depress mast cell function and the production of heparin. Heparin forms a complex with ACTH, and it is similarly called upon to inactivate the ultimate effectors of allergic reactions. Heparin is a known antagonist of experimental histamine liberators.[9,19,28,30] The net result is to leave insufficient amounts of heparin available for its normal functions, including anticoagulation (and thrombolysis). Thrombi tend to form and persist on abnormal vascular linings and in areas of vascular stasis. This tendency is increased when the normally present anticoagulant and thrombolytic safeguards are diminished in amount.

Thrombo-embolic phenomena are preventable by heparinization. In this situation heparin is the ideal anticoagulant because it: (1) is apparently the deficient factor; (2) is a "natural" anticoagulant, quickly acting, predictable in action and requiring a minimum of laboratory control[1,12]; (3) is a synergist to normal thrombolytic agents[27,38]; (4) prevents the disintegration of platelets[14,29] with consequent liberation of histamine[6,20,30,33] and serotonin[13,20,22]; and (5) is a welcome adjuvant to antiasthmatic therapy, for its antagonism to histamine, serotonin, bradykinin, SRS-A and permeability factors permit rapid reduction in ACTH or gluco-corticoid requirements and more rapid recovery. This effect was not noted in cases in which dicumarol was used as the anticoagulant.

Indications for the prophylactic use of heparin, based on clinical experience and laboratory observations, would be any one or combination of the following situations:

1. High dosage of corticotropin or gluco-corticoid necessary for over four days. (Over 80 units of ACTH daily or over 40 mg. of prednisolone or equivalent daily.)
2. Reduction of Lee-White coagulation time to 4 minutes or less.
3. Reduction of Allen protamine titration value to 0.08 mg. or less.
4. Presence of a vascular disorder with endothelial abnormality predisposing to thrombosis.

It would seem reasonable to attribute more significance to low protamine titration values than to low clotting times, as the latter are affected by more extraneous factors.

The only contraindications would be the usual ones of blood or liver dyscrasias, internal bleeding, or a reasonable prospect of such bleeding occurring.

In the absence of thrombo-embolic manifestations or reasonable prospect of same the use of heparin in mild or moderately severe cases of asthma, controllable by small doses of ACTH or gluco-corticoid or by other medications, is not warranted except in the two following situations:

1. Where a condition (such as coronary atherosclerosis) is present that would be independently benefited.
2. Where considerable emphysema and pulmonary fibrosis is present. Large or multiple small infarctions could reduce the pulmonary reserve to a critical level. There is already slowed circulation and higher resistance in such pulmonary circuits predisposing to intravascular thromboses. The higher pulmonary arterial pressure leads to predisposing intimal damage.

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Liquid Nitrogen Therapy of Warts

An Evaluation

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• The use of liquid nitrogen for the removal of warts has advantages over electrocautery in certain circumstances. Although the incidence of recurrences after liquid nitrogen is higher than after cautery, it causes considerably less scarring. It is most useful in dealing with peri-ungual and multiple warts.

The technique is simple and a supply of liquid nitrogen can be kept on hand in the office at relatively low cost.

A WAY HAVING BEEN FOUND for physicians to keep a supply of liquid nitrogen on hand in the office at relatively low cost (Figure 1), a reassessment of the use of this material in the treatment of warts is in order.

In some circumstances liquid nitrogen is not effective enough to warrant its use, in others it may be effective but less so than another method, and in still others—for certain kinds of warts or at certain sites—it is the best therapeutic agent.

The evaluations here reported are based on three years' experience in the treatment of warts with liquid nitrogen.

Warts in the scalp, whether single or multiple, do not respond well to liquid nitrogen. Recurrences are frequent after removal with this agent. For such lesions electrodesiccation is a preferred treatment.

Warts in the beard area of men do not respond well to liquid nitrogen. If enough is used to remove the wart, the frozen area is always larger than the lesion. Scarring and pigmentation are excessive, considering the small size of the lesion treated. Spot cautery is a preferred treatment for such lesions.

Filiform or digitate warts, usually found around the nostrils, face, mouth and neck, do not respond well to liquid nitrogen. Neither do anogenital warts.

Plantar warts. I have not found liquid nitrogen to have any advantages over other means of therapy. This opinion is supported by several investigators who have had much experience in the use of liquid nitrogen.[2,3] Multiple treatments are always required. Secondary infection, keloids and recurrences are as common as with other kinds of treatment.

Mosaic warts pose a problem entirely distinct from that of ordinary warts. They do not respond to liquid nitrogen or to electrodesiccation.

Discrete warts on the knees or elbows. When electrocautery is used, excessive scarring or keloid formation too often follows. These complications are almost non-existent when liquid nitrogen is used, but the rate of cure is not as great as that obtained with electrocautery. Sometimes after several treatments with liquid nitrogen, cautery has to be resorted to for removal.

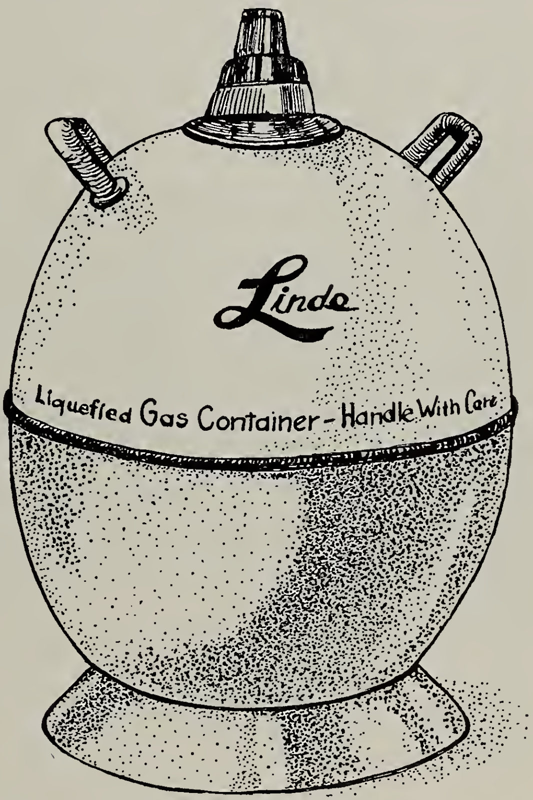
Linde
Liquefied Gas Container - Handle With Care

Figure 1.—Liquid nitrogen container in which a supply of the material can be kept constantly on hand in an office at a cost of about a dollar a day. Some two feet high, it fits easily beneath a table. The knob at the top of the tank is the handle of a small dipper which is used to remove liquid nitrogen in small quantities.

Multiple flat warts of the face or extremities. For such lesions in women or children, liquid nitrogen might be expected to be useful, but it is not. Usually there are so many lesions that it is impossible to remove all of them after multiple treatments. Any therapy of flat warts on the face of women that is

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Submitted July 2, 1962.

destructive, even careful cautery, leaves sequelae more unsightly than the warts were.

Multiple ordinary warts are most commonly seen on the hands. Occasionally they occur on the arms or legs too. Where there are many of them at one site, the avoidance of scarring becomes an important consideration. Since it is nearly impossible to cure multiple warts in one treatment by any method, the lesser scarring with liquid nitrogen gives it an advantage over cautery even though the recurrence rate is higher following nitrogen therapy.

Many of the warts on the knuckles in cases of multiple lesions on the hands are indefinite in outline. Having sloping borders, they merge almost imperceptibly with the surrounding normal skin, making it difficult to apply cautery to the wart without damaging normal tissue. When using liquid nitrogen, on the other hand, one is less likely to involve tissue beyond the periphery. Liquid nitrogen probably is the preferred therapy for any patient who has more than a half dozen warts. It is not a painless procedure—indeed sometimes is quite painful—and the therapist has to decide on the basis of experience whether or not to use local anesthesia in connection with it.

In the treatment of peri-ungual warts, liquid nitrogen has an advantage because it produces less scarring. One may treat and retreat peri-ungual warts by this method until a satisfactory result is obtained without producing the same degree of scarring and deformity of the nail that would result if repeated cauterizations were done.

If the avoidance of scarring is of primary consideration, as for example in treating warts on the dorsa of women's hands, then liquid nitrogen is the treatment of choice even for a solitary lesion. When it is successful, liquid nitrogen produces the next best thing to a spontaneous cure—that is, little or no scarring.

TECHNIQUE

The technique for use of liquid nitrogen is quite simple. The dipper is removed from the tank, and a cotton-tipped applicator soaked in the liquid, is applied to the wart. This process is repeated over and over, until the wart and surrounding tissue become white and hard. Unless the freezing extends a millimeter or two into normal tissue beyond the wart, the result will not be satisfactory. The time necessary to freeze a wart 0.5 cm. in diameter is some 8 to 12 seconds, counting only the time the applicator is touching the wart. Since each touch of the applicator freezes for about 3 seconds, three or four applications are required. The applicator tip should be touched lightly to the lesion, not pressed against it. Pressure may cause scarring. The aim is to cause the formation of a blister that is deep enough to raise the wart completely from its base. The patient may be told that if the blister becomes troublesome because of excessive size he may open it, at the side, with a needle to let the fluid escape. Generally speaking it is advisable to leave the top of the blister intact, to serve as a protective covering for the raw surface beneath. Sometimes considerable pain develops at the site of treatment but most patients tolerate it well. If upon examination of the treated site when the patient returns to the office after the procedure, it appears that the wart has not been completely lifted from its base, the top of the blister should be removed and the lesion retreated.

65 North Madison Avenue, Pasadena.

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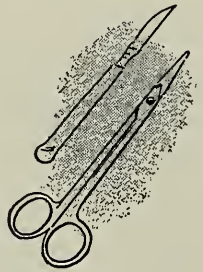

Rheumatoid Arthritis

Operations on the Hand for Improvement of Function

LEONARD MARMOR, M.D., Los Angeles

• Once the deformities of rheumatoid arthritis of the hand begin to develop, conservative management will not prevent their further development. The ulnar drift of the fingers can be improved considerably by a surgical operation, especially if performed early. Experience has shown that an operation performed during the active stage of the disease does not cause exacerbation of symptoms. The results of operations have been encouraging with regard to return of function, decrease in pain and improved appearance of the hand.

A NUMBER of surgical procedures are available for improving the function of hands that are crippled by rheumatoid arthritis. In the past, it has been the policy to wait until the disease has burnt itself out before considering an operation lest the procedure exacerbate the condition. However, it has been my experience that an operation can help arrest the disease process if it is carried out before severe destruction of the joints has taken place. It is indeed satisfying to see the improvement in function, the relief of pain and the great psychological lift to the patient that can be brought about by such an operation.

The early change that sometimes develops in the hands of patients with rheumatoid arthritis is swelling of the metacarpal-phalangeal joints. During the early phase, injection of the joints with hydrocortisone and the application of functional bracing may be of some value. Bracing is of little corrective value once deformities have developed, however, for it does not reverse contractures that have already occurred.

It is of great advantage to treat these patients with a team concept when possible. The team should consist of a surgeon, a rheumatologist or qualified internist, and an orthotist (brace maker). Careful evaluation must be carried out before operation to avoid operative and postoperative problems.

Unless the patient is hopeful and interested in improving his condition, the operation is doomed to failure. Postoperative management requires diligent care by the surgeon and constant work by the patient and physical therapist to improve the motion and power of the hand.

ULNAR DRIFT DEFORMITY

The most common deformity that develops in the hand is ulnar drift. It causes diminished gripping power and loss of ability to extend the fingers completely. Sometimes it is an extremely disabling condition, but most patients learn to live with this deformity. In selected cases, operative correction can improve the function and the appearance of the hand.

Treatment by Synovectomy and Tendon Transplants

The operative procedure consists of a transplant of the extensor tendons to correct the ulnar drift. First, a transverse incision is made through the skin to expose the extensor mechanism. The transverse fibers of the extensor hood are divided so that the capsule and synovium are exposed. (They are usually found to be decidedly hypertrophied.) Next, the synovium is removed from the joint, which exposes the articular cartilage. The collateral ligaments are left intact to prevent instability of the joint. Then the extensor tendon is repositioned over the dorsum of the joint and sutured into place. In order to stabilize the fingers further and to provide an active, corrective force, the indicis propius tendon is removed from the hood and transplanted to the first dorsal interosseus tendon by passing it beneath the common extensor. If the tendon is passed over the top of the common extensor, it will tend to bind down and not slide freely.

Cutting the interosseus muscles on the ulnar side of the fingers is helpful. The muscles are the first volar interosseus, the third dorsal interosseus, the fourth dorsal interosseus and the abductor digiti quinti brevitus muscles, and they are cut at their musculotendinous junctions. To correct pronounced ulnar deviation of the fifth finger that has been caused by contracture, after the digiti quinti brevitus muscle is cut the extensor digiti quinti is removed from the hood and passed beneath the common extensor to the radial side of the fifth finger. It is

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then sutured into the transverse fibers of the extensor hood to provide a dynamic correcting force.

A pressure dressing is applied with an ulnar and volar splint to prevent the drift. Since the dressing becomes looser with the decrease in swelling of the hand postoperatively the fingers must be rewrapped after a few days to prevent ulnar drifting.

The fingers are mobilized two weeks after the operation, and bracing is applied when the wound is well healed. I have noted no difficulty with healing despite the patients' having received large doses of cortisone during operation and afterward.

Treatment by Arthroplasty

If the disease process has produced stiffness of the metacarpal-phalangeal joints with a complete dislocation of these joints, synovectomy alone will not give a satisfactory result. Removal of the synovium will be beneficial, but as contraction has drawn the phalanx beneath the metacarpal head, extension of the finger is impeded. In such cases arthroplasty of the joint must be considered.

The metacarpal head is shortened and reshaped to allow reduction of the dislocation of the metacarpal phalangeal joints. The articular cartilage should not be removed from the proximal phalanx, for without it the joints would fuse spontaneously. The tendons are then transplanted as in synovectomy. A Kirschner wire inserted from the metacarpal into the phalanx fixes the finger in a position of function, and it is held that way for two weeks. The scarring that occurs in that time gives a degree of stability to the fingers when the Kirschner wires are removed. Paraffin baths and active exercise are then begun. Postoperative bracing is of value to increase the range of motion.

FINGER DEFORMITIES

One of the common deformities of the hand brought about by rheumatoid arthritis is the "swan neck" formation caused by hyperextension of the proximal interphalangeal joint and flexion of the distal interphalangeal joint. Since it prevents flexion of the fingers for grasping, it seriously limits the function of the hand. Often this condition may be improved by instrinsic release through removal of the oblique fibers of the hood. Removing these fibers on both sides of the finger, rather than on the ulnar side only, improves the function without much sacrifice of stability. The test for complete correction at the time of operation is to extend the metacarpal phalangeal joint to 180 degrees, and flex the proximal interphalangeal joint to 90 degrees. If the finger does not bend to 90 degrees, the incision should be carried more proximally, up to the transverse fibers of the hood and distally over the proximal interphalangeal joint to allow more flexion. After immobilization in plaster for approximately five days after operation, bracing is used to maintain the correction. If the central extensor tendon slip is contracted, a lengthening of the slip may be of considerable value.

Another fairly common deformity in the rheumatoid patients is ankylosis of the proximal interphalangeal joints in severe flexion, which prevents the patient from holding objects in his hand. This involves most often the fourth or fifth finger. The best operation for patients with this deformity is to fuse the fingers in a position of function with the proximal interphalangeal joints at an angle of about 45 degrees.

Tenosynovitis of Flexor Tendons

A number of patients have limitation of flexion of the fingers which is the result not of involvement of the joint but of the flexor tendons. At operation, decided swelling of the tendon sheaths and hypertrophy of the synovial tissue about the tendon can be seen. Excision of the synovial tissue and splitting of the tendon sheath returns a normal range of motion to the finger. Often there is a bulbous involvement of the flexor digitorum profundis just beyond the point at which it passes through the opening of the sublimis. In such cases either the swollen tissue should be excised or the sublimis opening enlarged. Otherwise, triggering and snapping of the fingers will continue postoperatively.

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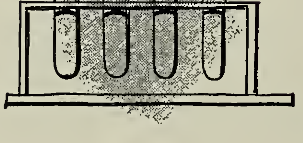

CASE REPORTS

Hereditary Thyroid Dysgenesis

Report of a Case with Masked Symptoms

KARL M. BOWMAN, *M.D.*, and
MIRIAM GOULD, *M.D.*, San Francisco

A LARGE NUMBER of endocrinologists consider that the presence of a characteristic mental syndrome is essential to the diagnosis of many endocrine disorders—for example, neurasthenia in hyperparathyroidism, depression in pituitary or adrenal cachexia. In general, psychiatrists are less aware than are endocrinologists of the great variety of endocrine disorders with enzyme and biochemical abnormalities that are known to determine or to modify a person's state of mind or method of dealing with his environment.

Psychiatrists have long been interested in the role of the thyroid gland in mental deficiency and mental disease. Cretinism is recognized as a condition of arrested development due to a congenital lack of thyroid secretion. Myxedema is generally defined as an acquired defect in thyroid functioning and is characterized mentally by slowness in thought and behavior. Commonly in this condition there is impairment in intellectual functions and little interest and concern in what is going on about the patient but occasionally there is irritability, with complaints that may border on a paranoid state. Hyperthyroidism commonly brings about tachycardia, tremor, loss of weight, easy fatigability, overactivity, emotional instability and nervous tension.

Kraepelin considered dementia praecox a metabolic disorder, most probably due to malfunctioning of the thyroid and gonads, and afterward hundreds of articles were published dealing with this postulation.

Goldberg[1] recently attempted to link hypothyroidism with alcoholism. He studied 100 chronic alcoholics of whom "47 were found to be unequivocally hypothyroid." He also reported treating 12 acute alcoholics with intravenous L-triiodothyronine, noting that the mean rate of metabolism of alcohol was twice as rapid in the treated patients as in eight untreated controls.[2] In one patient with delirium tremens and low blood alcohol (25 mg. per 100 ml.) auditory and visual hallucinations disappeared within an hour after intravenous administration of L-triiodothyronine and did not reappear.

Although definite distinctive mental symptoms have been ascribed to various specific thyroid and endocrine disorders, mistakes in diagnosis may occur from the failure to realize that even in organic disease the patient may have a specific emotional reaction that is caused by his individual way of reacting to the fact that he recognizes he has some sort of sickness. This can be illustrated by two brief examples.

1. A woman patient with pronounced gain in weight, who was apparently somewhat lethargic but worried and depressed, was finally found to have hyperthyroidism. She said that she had felt very tense, restless and easily fatigued, and then had adopted a mode of behavior which she had often used when she felt emotionally upset: This was to overeat greatly (with a resultant weight gain) and to withdraw in an apathetic manner.
2. A married woman with loss of weight, overactivity and obvious agitation and apprehension was found on examination and laboratory tests to have hypothyroidism. Her first symptom was an inability to think clearly; then becoming greatly agitated at her inability to function at her usual intellectual level, she was unable to eat and became distraught and restless.

It will be seen that the emotional reactions of a person to an illness may produce symptoms that are not the true result of the illness itself and that may actually so mask the symptoms that a wrong diagnosis is made. Sometimes the emotional symptoms serve to deny the physical symptoms, so that complaints are opposite to those expected of a particular disease, as in the two cases just given.

Recently a new type of genetically determined hypothyroidism with goiter has been reported and summarized by Stanbury.[3] His report is of special interest because it shows that practically all the known tests of thyroid function may be misleading in cases of this type. Five types of thyroid dysfunction have been identified:

(1) Iodide trapping defect, in which the selective concentrating mechanism for iodine is missing. Serum iodine enters the gland only by perfusion. This condition is correctable by an excess of iodine in the diet.

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(2) Organification defect, in which the gland is unable to convert iodine into thyroglobulin.

(3) Impaired coupling of the hormone into its useful derivative.

(4) Impaired de-iodination because of lack of dehalogenase.

(5) Syndrome of butanol-insoluble serum iodine. In this condition there is a quantitative deficit in the percentage of butanol extractable iodine (60 per cent versus a normal 90 per cent). In each of the foregoing syndromes a conclusive genetic pattern has been traced.

The following case is presented to illustrate the difficulty in diagnosing correctly this new type of genetically determined hypothyroidism and to show that both psychologic and physiologic treatment may be required in such a case.

REPORT OF A CASE

The patient, a 25-year-old divorced student, had a poor academic record and was affiliated with groups of "social protest." She had infrequent homosexual experiences but generally lacked drive to pursue any relationship or goal. She tended to be silent, with immobile features. She denied heat intolerance, loss of hair, dry skin, menstrual irregularities or constipation. The only abnormalities noted on physical examination were congenital nystagmus and chronic non-specific rash of the forearms. Protein-bound iodine at that time and once subsequently was within normal limits. She spent four years in psychotherapy and was seen weekly. Attempts to explore or interpret her silences were thwarted although she seemed a little more energetic after each interview. Gradually she improved, and managed to secure a master's degree while being self-supporting. She renewed sexual relations with men. She discontinued therapy for two years and then returned, seeking advice over a choice of two job possibilities. It was noted then that she had gained over 20 pounds in weight and that there was some periorbital puffiness and fullness at the base of the neck. An endocrinologist noted diffuse enlargement of the thyroid gland. Uptake of radioactive iodine was within normal limits. Protein-bound iodine of 4.5 micrograms was interpreted as low normal, and butanol-extractable iodine was 2.0 micrograms, which was exceedingly low. Because of the low butanol-extractable iodine and the discrepancy between that and the protein-bound iodine, an interpretation of syndrome of butanol-insoluble serum iodine was made, assuming the patient to be elaborating an inactive or incomplete hormone. Triiodothyronine was prescribed and within two months the patient had lost 26 pounds, the thyroid gland was no longer palpable and the periorbital puffiness had disappeared. Her animation and spontaneity of speech were in striking contrast to her former silence and immobility. She remarked that her mother and sister now seemed lethargic in comparison with her and wondered aloud if her mother's puffiness and chronic stiffness could be due to a thyroid condition. At the time of this report, however, neither the mother nor the sister had had an evaluation of thyroid status although they had been urged to do so.

DISCUSSION

This case illustrates how hereditary, physiological and psychological factors may all enter in causing the patient's condition and that reliance on a one-avenue approach may cause misdiagnosis and inadequate treatment. It is the psychiatrist's responsibility to determine the degree to which each of these three factors enters into the patient's illness. In the present case the possibility of thyroid dysfunction was considered and the techniques that were accepted as standard at the time were used to determine whether or not the gland was functioning normally. Results of the tests were within normal limits and thyroid dysfunction was apparently ruled out. However, the therapist in this case was well trained in endocrinology as well as psychiatry. At a later date further evidence of thyroid dysfunction developed and a new test for butanol-extractable iodine showed clearly that there was a specific type of hypothyroidism. Striking improvement then followed the use of the appropriate physiological treatment.

This case also illustrates how certain errors in psychological interpretation may occur when the physiological dysfunction is not recognized and understood. At one time it was thought that the patient's silence and lack of spontaneity were evidence of resistance to therapy. When it was found that her mother was a rather lethargic and silent person, the patient's attitude and behavior were thought to represent an identification with the mother. The gain in weight was thought possibly due to a well recognized type of behavior in which some persons under stress resort to eating large amounts of food, getting thereby a temporary feeling of well-being and a decrease in emotional tension.

We would like to postulate that it is possible to go one step further back in understanding mental disorders by demonstrating that, at times, well-recognized physiological dysfunctions may cause a patient to be inadequate and incapable of dealing with certain problems and conflicts. If we recognize and treat successfully this physiological dysfunction the patient will then become capable of coping with his emotional difficulties.

It is well known that all persons have some emotional conflicts and difficulties of adjustment. We feel that in circumstances such as those described in the present case, it is better to restore the patient to normal physiological functioning, which in turn will raise him to a level at which he may be able to deal adequately with his emotional problems and this may render it unnecessary to continue psychotherapy indefinitely. All this shows the necessity of psychiatry's remaining in the closest possible contact with the rest of medicine. Although this latter point has been emphasized repeatedly in a number of fine articles by many of our leading psychiatrists, it appears necessary to reemphasize it.

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Gastrojejunocolic Fistula

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GASTROJEJUNOCOLIC FISTULA can be the most challenging complication of peptic ulceration. Although it is possible to correct these fistulas by a single operation, it is suggested that if there is extensive surrounding inflammatory reaction staged operations should be used—preliminary proximal colostomy, then later a second operation (resection of involved colon and jejunum and partial gastrectomy, with or without vagotomy). An alternative, although somewhat more complicated, staged operative treatment consists of preliminary anastomosis between the ileum and descending colon, followed by partial colectomy, jejunectomy and gastrectomy.

The operative mortality associated with repair of gastrojejunocolic fistula was appallingly high until 1939, when Pfeiffer[4] reported considerable improvement in cases in which a preliminary proximal colostomy was done. At the second operation several months later (when, it was observed, there was relatively little inflammatory reaction about the fistula) the jejunum was detached from the stomach and the defects in the jejunum, the colon and the stomach were closed. Pfeiffer observed that the cause of diarrhea in patients with gastrojejunocolic fistula was a reflux of colon contents through the fistula into the jejunum, producing severe enteritis.

Mathewson in 1941 reported upon several patients successfully treated by preliminary proximal colostomy (one by preliminary cecostomy) and then a month or so later by excision of the fistula and extensive partial gastrectomy. Lahey[1] and Marshall[2] also reported staged procedures which reduced mortality. Colostomy was not used. The terminal ileum was divided, the distal end closed and the proximal end (ileum) anastomosed to the descending colon. At a second operation, the terminal ileum and all colon to a point distal to the fistula were removed and partial gastrectomy was carried out.

Gastrojejunocolic fistulas are rare but diagnosis is not difficult. Recurrent "ulcer-type" pain following operation for peptic ulcer often may indicate marginal ulceration. Subsequent persistent diarrhea and loss of weight are presumptive of fistula. Barium enema roentgenograms nearly always are diagnostic.

REPORT OF A CASE

A 41-year-old machinist, first observed by the author in June, 1959, had had ulcer symptoms since 24 years of age. In 1951 he had had a four-fifths gastrectomy with a posterior anastomosis for duodenal ulcer. In 1952 he had the first of many episodes of gastrointestinal bleeding, often severe. By then at least two jejunal (marginal) ulcers had developed. Transthoracic vagotomy was done but gastrointestinal bleeding continued intermittently. The patient received 34 units of blood in the period between the initial surgery, in 1951, and the onset of persistent diarrhea early in 1959.

He was admitted to hospital in June, 1959, after four months of severe diarrhea (often as many as 12 stools in 24 hours), during which time he lost approximately 30 pounds in body weight. On physical examination a tender, firm mass 8 inches in diameter was palpated in the epigastrium. Barium enema studies showed a gastrojejunocolic fistula. Serum contents of sodium, potassium and proteins, and the carbon dioxide combining power, were within normal limits. Prothrombin time was normal. Serum chloride was 95 meq. per liter. Hemoglobin was 10.5 gm. per 100 cc., which increased to 14 gm. after the patient had received four units of blood in five days. Preoperatively, the patient also received 1 gm. of neomycin every four hours for four days, and enemas for one day. No antibiotics were given systemically before operation, nor were any instilled at any of the various points of anastomosis during operation.

At operation a decidedly inflamed mass about 8 inches in diameter surrounded the mid-transverse colon and the site of the previous gastrojejunostomy. There were two jejunal ulcers. One of them, 3 cm. in diameter, had penetrated the jejunum, ending in the transverse mesocolon. The other had eroded into the lumen of the mid-transverse colon, forming a gastrojejunocolic fistula 2 cm. in diameter. The afferent jejunal limb was approximately 20 cm. long. The gastric remnant was about the same length along the greater curvature. The duodenal stump was not visualized because of massive adhesions. The fistula was resected by removing segments of transverse colon and jejunum with respective end-to-end anastomoses. Then a high gastric resection with end-to-side antecolic anastomosis between the new gastric remnant and the jejunum just distal to the jejunojejunostomy was done. Postoperatively, the patient developed a fecal fistula, arising from the end-to-end colon anastomosis. This fistula communicated

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with a supratransverse mesocolic abscess, which was drained a month after the preceding operation. During his stay in hospital for that procedure, the patient had repeated episodes of tarry stools, and received 25 units of blood. He was discharged to his home two months later.

The fecal fistula did not close until January, 1960, six months after operation. The patient's bowel habit then became normal and the hemoglobin content of the blood was within normal limits. He said he had no abdominal pain and he was chiefly concerned about increasing obesity.

Two months later (March 13, 1960), the patient again entered the hospital because of tarry stools. Hemoglobin then was 8.7 gm. per 100 cc. of blood. Blood and electrolyte replacement was carried out and antibiotics were given. At operation (March 21, 1960) two large jejunal ulcers were observed opposite the gastric stoma. The larger one, 3 cm. in diameter, was bleeding. At the suture line of the previous end-to-end colon anastomosis there was an opening 1.5 cm. in diameter which ended in a blind tract. A further segment of jejunum was excised and end-to-end anastomosis was carried out; and further partial gastrectomy with full-lumen antecolic anastomosis was done between the new gastric remnant and jejunum distal to this second jejunojejunostomy. The area of the previous colonic anastomosis was resected and a new end-to-end anastomosis was formed near the hepatic flexure. A loop of ascending colon was exteriorized, and subsequently divided as a colostomy.

Suddenly, thirteen days later (April 3, 1960), the patient bled massively by mouth and from the colostomy. After receiving 16 units of blood in approximately eight hours, he was taken to the operating room moribund. Operation (jejunotomy) revealed a new bleeding jejunal ulcer 1.5 cm. in diameter opposite the gastrojejunal stoma. This ulcer did not involve any suture line. The hemorrhage was stopped by "oversewing" the ulcer.

About six weeks later (May 16, 1960), although barium enema showed moderate narrowing at the colonic anastomosis, closure of the colostomy was carried out. Five days later (May 21, 1960), obstruction developed at this point and the patient was again taken to surgery, again moribund, with a perforated cecum and the peritoneal cavity flooded with feces. The cecum and half of the ascending colon were rapidly exteriorized. The patient responded remarkably to intra-peritoneal wash of 1000 cc. of 0.5 per cent Clorpactin® XCB (monoxychlorosene); 20 million units of penicillin intravenously every 4 to 6 hours; and intravenous administration of vancomycin, tetracycline, and chloramphenicol. The septic shock was treated also by intravenous neo-synephrine. He was discharged to his home one month later, wearing a large ileostomy bag. During this period in hospital, he received 55 units of blood.

Four months later (October 28, 1960) the terminal ileum, ascending and transverse colon were resected and an end-to-end anastomosis between the remaining terminal ileum and splenic flexure was carried out. The patient tolerated this procedure well. He worked steadily as a machinist after February, 1961, having normal bowel habit and little or no abdominal pain. He had no special diet but took an antacid agent daily. (The continuing high gastric acidity remained unexplained. Incomplete vagotomy, antral remnant, or islet cell tumor are possible causes.) From 1951 (first operation) through October, 1960 (last operation) this patient has received 120 units of blood, most of it for marginal ulcer bleeding. In 17 months of observation after the last operation he required no further transfusions.

SUMMARY

Formidable complications followed when a one-stage operation for gastrojejunocolic fistula was done in the presence of extensive surrounding inflammatory reaction.

It is suggested that staged operations, including preliminary proximal colostomy, should be used in such a case.

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EDITORIAL

Unification Complete

On November 6 the voters of California voted overwhelmingly in support of the unification of the medical and osteopathic professions in California. By latest count, not yet made official by the secretary of state, Proposition 22 rolled up 3,278,257 affirmative votes, more than double the 1,401,158 votes cast in opposition.

Much could be made of the fact that every one of California's 58 counties lined up in favor of the proposition and that except for one technical proposal to streamline the state constitution Proposition 22 polled more affirmative votes than any other proposition on the ballot. These statistics may be useful in political arguments in the future. Right now they are simply figures which pale beside the fact of a very worthwhile accomplishment by the professions in California.

The entire program of unification was laid out in black and white just two years ago. It has proceeded, step by step, through this final stage, the affirmation by the people. Each step was successful, in line with the original proposal, and each led, inevitably it now appears, to culmination in the successful public ballot.

In review, Proposition 22 transfers the licensing and regulation of all M.D.'s to the State Board of Medical Examiners, stops any further licensing of osteopaths in California, allows amendments to the osteopathic licensing act by the Legislature and provides for dissolution of the osteopathic board when its licensees decline to 40.

Thus ends the era of duplicate licensing of physicians and surgeons in California by two separate boards. Where the public was evidently convinced in 1922 that a difference in medical and osteopathic graduates existed, and voted to establish a separate osteopathic board, the 1962 public has expressed itself that all differences have now disappeared and that a single state agency should handle the entire problem.

There is nothing to be gained by reviewing the history of the unification program but it must be remembered that the national osteopathic organization fought with all its vigor against the joining of the two professional groups. Doubtless the handwriting appeared on the wall, probably in capital letters, when the California Osteopathic Association, representing about one-fifth of the national membership, was turned out of the national group because it favored unification.

The message on the wall would seem to be growing in strength and length at this time, when it is reported that ten other states are moving in the direction of improved relations between medicine and osteopathy. In the past 18 months there has been activity in this regard in New Jersey, Colorado, Delaware, Ohio, Missouri, New York, Washington, Tennessee, South Dakota and Iowa.

Proposals in these states have ranged from simple statements of mutual recognition to the promotion of programs patterned on our own. From these plans there is bound to emerge a diminution of the real or fancied differences between the two schools and a closer liaison, for the good of the public, between the medical and osteopathic groups.

Latest in the series of state reports comes from Pennsylvania, where a special committee of the state medical association has suggested to the osteopathic physicians of the state and to their school in Philadelphia that a plan almost identical to California's be entered into by mutual agreement. To date the state's osteopathic association has officially shied away from such proposals but there is every evidence that a large portion of Pennsylvania's osteopathic physicians are in favor of the medical association's suggestions.

The medical association committee in Pennsylvania states that "the distinction [between medicine and osteopathy] is needless, artificial and untenable and is not supported either by the Philadelphia College of Osteopathy or by the majority of practising osteopathic physicians."

Further aong, the committee states: "Osteopathic medicine as a cult, that is, in the sense of a concept of a single cause and cure for all disease, has been withdrawn from the current teaching and largely from the practice of osteopathy." These statements concisely argue for the removal of all differences in licensure and in practice between the two disciplines. California has now taken all the steps needed to eliminate these differences. Other states are bound to follow.

There remain several problems to be solved before all differences are completely removed in California. Such questions as component society membership and specialty certification are still to be answered. These matters were recognized at all times during the long planning of the California unification but were put aside until the more important philosophical and legal aspects could be resolved. Now that the people of the state have spoken, there appears to be ample reason for optimism in the solution of the remaining problems.

Where California has taken the lead, others will follow. Obviously there was much holding of breath in other states while the California program was under way. It is time now for normal respiration to resume.

The former two groups in this state are now one. Together, they comprise an even larger and stronger state association. They have proved that obstacles thrown in the path of progress can be overcome and that good sense, put in its proper light before the people, can be enacted into law.

We wish the best of luck to other states which may seek to solve their own interprofessional problems. We offer our help if it may be useful.

A.M.A. Meets in Los Angeles

Meeting in Los Angeles in the week following Thanksgiving Day, the American Medical Association set a new record for its clinical session and, despite dour predictions that the meeting would accomplish nothing, gave evidence that the organization was going forward on both scientific and socio-economic fronts.

More than 5,200 physicians and more than 4,200 guests were registered, both new highs. With the addition of industrial exhibitors and their guests, total registration amounted to 10,908.

On the scientific front, the A.M.A. made a series of announcements which indicate that the organization is returning to its normal stride of more than a century in the advancement of the science and art of medicine and the protection of the public health.

Founded in 1847 for these purposes, the organization existed until 1949 without assessing any dues against its members and with a minimum of attention paid to any matters, public or legislative, that were at all outside the field of medicine and medical practice. The A.M.A. was, without doubt, a tremendous postgraduate training institute.

In 1949 it became obvious that political and other bodies were intent on chipping away at the science and art of medicine in promoting and sponsoring legislation ostensibly aimed at solving the economic problems of people but exerting great forces to disrupt the orderly scientific progress which had been the organization's privilege and history for more than a century.

With the rather abrupt entry of the A.M.A. into legislative and socio-economic fields, the organization became the butt of propaganda generated by persons and groups with political axes to grind and the individual physician, while still commanding the respect of former years, suffered a decline in his position because he was a member of the nationwide group.

The new plans of the A.M.A. call for a resurgence of the science and art of the profession, a move which is bound to find reflection in the public press. In turn, the favorable aspects of scientific advances will tend to restore the old and familiar picture of the physician as both healer and friend.

Doctor Hugh Hussey, dean of the school of medicine at Georgetown University and former chairman of the A.M.A. Board of Trustees, has been selected to carry on the new program. His choice appears excellent and we wish him well.

On the business side of the Los Angeles meeting, approval was given to several California suggestions for improved methods of financing health care for aged or other groups of needy citizens. California's proposals suggested that Kerr-Mills supporting legislation be pushed in all states and improved in those states where deficiencies had appeared. California also suggested that tax deductions or credits be made to aged persons or to those meeting the health care costs of those over 65 years.

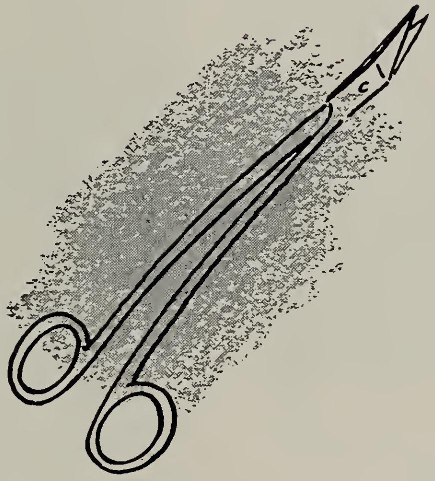
The California resolutions were not acted upon directly but their substance was incorporated in a supplementary report of the board of trustees which was approved by the House of Delegates.

Some question has been raised as to whether the supplementary report of the board was prepared before or after the California resolutions had been introduced. In any event, the House of Delegates has approved these suggestions as policy to be followed by the A.M.A. The difference between approving a report and adopting a resolution lies in the measure of authority carried by the proposed program. Whereas a House of Delegates action is tantamount to an order by the legislative body, a board report accepted by the house is a less insistent form of policy approved, with no machinery for enforcement.

The House of Delegates also approved bylaw amendments which increase the size of the Board of Trustees. This proposal, also made by California in 1961, was the subject of study by a special committee which recommended increasing the board from 11 to 15 members by the addition of three elected members as well as the immediate past president of the association. This makes a total of 15 members, 12 elected and the president, president-elect and the immediate past president. This recommendation was approved by the House of Delegates.

A companion measure, a constitutional amendment which would reduce the term of office of board members from five to three years, failed of adoption when, late in the meeting, the number of voting members of the House of Delegates in attendance dropped considerably. Constitutional amendments require a two-thirds affirmative vote of all registered voting members, not just those present and voting, and this amendment just missed that requirement. It will be voted on again in June, as the first order of business of the House.

There remains in the minds of many delegates and others the question of whether or not the clinical sessions of the A.M.A. are really necessary. This question has been raised in the past several years and some day will doubtless come up for a decisive vote. Meanwhile, the Los Angeles meeting did indicate some signs of progress and did attract a large attendance.



California MEDICAL ASSOCIATION

NOTICES & REPORTS

PROPOSED AMENDMENTS TO CONSTITUTION

Amendments to the Constitution of the California Medical Association are required to lie on the table for one year before being voted upon. Six proposed amendments to the Constitution were introduced in the 1962 House of Delegates. Under the terms of the Constitution, these were subject to review by the Reference Committee in the 1962 House of Delegates and will also be reviewed by Reference Committee No. 4 in the 1963 House before being voted upon in that session. In five instances the 1962 Reference Committee made specific recommendations which were adopted by the House and are shown following the proposals.

In some instances the Reference Committee suggested that proposed amendments to the By-Laws, which need lie on the table only twenty-four hours, also be deferred until 1963 because of their association with constitutional amendments on the same subject. In the section on By-Law Amendments following this section, such deferral will be noted.

The following Amendments to the Constitution were offered in 1962, all of them placed on the table for definitive action in 1963.

* * *

1962 AMENDMENTS

Six proposed amendments to the Constitution were introduced in the 1962 House of Delegates. They were reviewed by Reference Committee No. 4 of the 1962 House of Delegates and will also be reviewed by Reference Committee No. 4 of the 1963 House. In certain instances the 1962 Reference Committee made certain specific recommendations which were adopted by the House.

CONSTITUTIONAL AMENDMENT No. 1

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Article I, Section 3 of the Constitution of the California Medical Association as now written be deleted and this section to read as follows:

"This Association is an organization composed of the component medical societies and their members, the House of Delegates, the Council, the Scientific Board, the Scientific Assembly, Bureaus, Commissions and Standing Committees."

* * *

CONSTITUTIONAL AMENDMENT No. 2

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Article III, Section 1, be amended by deleting the word "and" at the end of subsection (c), and by adding a new subsection (d) to read as follows:

"(d) Ex-officio with the right to vote, eighteen (18) members of the Scientific Board selected as provided in the Bylaws, and"

The present subsection (d) shall be redesignated (e).

* * *

CONSTITUTIONAL AMENDMENT No. 3

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Article III, Part B, Section 9,

OMER W. WHEELER, M.D.	President
SAMUEL R. SHERMAN, M.D.	President-Elect
JAMES C. DOYLE, M.D.	Speaker
IVAN C. HERON, M.D.	Vice-Speaker
CARL E. ANDERSON, M.D.	Chairman of the Council
BURT L. DAVIS, M.D.	Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D.	Secretary
DWIGHT L. WILBUR, M.D.	Editor
HOWARD HASSARD	Executive Director
JOHN HUNTON	Executive Secretary

General Office, 693 Sutter Street, San Francisco 2 • PRospect 6-9400

ED CLANCY	Director of Public Relations

Southern California Office:
1515 N. Vermont Avenue, Los Angeles 27 • 663-8071

of the Constitution of the California Medical Association shall be amended by inserting a new subparagraph (c) and redesignating the present subparagraph (c) as (d), and the present subparagraph (d) as (e). The new subparagraph (c) shall be inserted immediately after subparagraph (b) and shall read as follows:

"(c) One (1) member of the Executive Committee of the Scientific Board to be elected by the Executive Committee of that body from representatives of the scientific sections or members-at-large."

* * *

CONSTITUTIONAL AMENDMENT No. 4

(Printed with Action following Constitutional Amendment No. 5)

* * *

CONSTITUTIONAL AMENDMENT No. 5

Author: Dwight L. Wilbur.

Resolved: That Article III, Part A, Section 1, be amended by deleting the word "and" at the end of subsection (c), and by adding a new subsection (d) to read as follows:

"(d) Ex-officio, with the right to vote, the members of the Scientific Board, and"

The present subsection (d) should be redesignated as (e).

ACTION: The House adopted a motion directing the Council to appoint a committee to make a study and submit a report to the delegates and alternates at least thirty days before the next annual meeting concerning the membership requirements, voting procedures and organization of the scientific sections contemplated in Constitutional Amendments Nos. 1, 2, 3 and 5.

* * *

CONSTITUTIONAL AMENDMENT No. 4

Author: Los Angeles delegation.

WHEREAS, the Council of the C.M.A. is an important group in carrying on the activities of the C.M.A.; and

WHEREAS, it is important that the members of the Council be responsive to the desires of the majority of the members of the C.M.A.; and

WHEREAS, a democratic organization provides a vote to all its members; now, therefore, be it

Resolved: That the Constitution of the C.M.A., Article III, Part B, Section 11, be amended to read as follows:

"SECTION 11—Election of Councilors

"District Councilors shall be elected by the vote of the members, entitled to vote, from each District, in the manner and at the time specified in the By-laws."

and be it further

Resolved: That the Bylaws of the C.M.A. be amended to provide for the election of District Councilors in accordance with this Constitutional amendment.

ACTION: Constitutional Amendment No. 4 (together with Bylaw Amendment No. 12 printed under 1962 Bylaw Amendments) was referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next annual session.

* * *

CONSTITUTIONAL AMENDMENT No. 6

Author: Allyn J. McDowell.

Representing: Los Angeles.

Resolved: That the Constitution of the California Medical Association be amended by adding to Article I, Section 2, the following:

"This Association shall not have the right to enter into a contract with any person, firm, or agency of any kind with respect to the practice of medicine or fees for such practice."

BYLAW AMENDMENTS FOR ACTION IN 1963

Two proposed amendments to the By-Laws introduced in the 1962 House of Delegates were, on recommendation of the Reference Committee and vote of the House, deferred for consideration until 1963. These are shown here as introduced in 1962 and as identified, numerically, in the 1962 meeting.

The Reference Committee also suggested that a special committee be established, to review these deferred amendments. This committee, which has been established by the Speaker, will review all amendments to the Constitution and the By-Laws which relate to the structure of the Association.

Shown below are the amendments to the By-Laws introduced in 1962 and deferred for action in 1963.

BYLAW AMENDMENT No. 12

Author: Los Angeles delegation.

WHEREAS, the Council of the C.M.A. is an important group in carrying on the activities of the C.M.A.; and

WHEREAS, it is important that the members of the Council be responsible to the desires of the majority of the members of the C.M.A.; and

WHEREAS, a democratic organization provides a vote to all its members; now, therefore, be it

Resolved: That the Bylaws of the C.M.A., Chapter VIII, Section 6 and Section 6.5 be amended to read as follows:

“Section 6—Election of District Councilors in Districts Having One or More Councilors

“The members of each component society shall elect the number of District Councilors to which the component society is entitled. At least sixty (60) days prior to the next scheduled session of the House of Delegates, the Secretary of each component society shall forward to the Secretary of the Association, on forms provided by the Association, the names and addresses of those District Councilors, so elected, and shall certify thereon, the term of service of each individual Councilor.

“District Councilors shall be elected, by the districts, at the same time and manner that Delegates and Alternates to the House of Delegates of the Association are elected by their respective component societies.

“Districts, in which Councilor vacancies are about to occur, shall, by secret ballot and majority vote, of the members of the district eligible to vote, and voting, elect a District Councilor to fill each vacancy, from such district, to serve for the ensuing term.

“Where new offices are created under the terms of Article III, Part B, Section 9(a) of the Constitution, each such new office shall be numbered serially with those already existing, and shall carry an initial term extending to the same date as has been previously established for offices in the same numerical sequence, heretofore established, and thereafter for a term of three (3) years.”

and be it further

Resolved: That Section 6.5 of Chapter VIII of the Bylaws of the C.M.A. be repealed and stricken from the Bylaws.

ACTION: Bylaw Amendment No. 12 (together with Constitutional Amendment No. 4 printed under 1962 Constitutional Amendments) was referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next annual session.

BYLAW AMENDMENT No. 13

Author: Allyn J. McDowell.
Representing: Los Angeles.

Whereas, the C.M.A. Bylaws have heretofore provided for a referendum vote of all the members only at the discretion of either the Council or the House of Delegates; and

Whereas, these two referring bodies constitute the very bodies concerning whose decisions any appeal of the members might be needed or sought; and

Whereas, it is inconsistent with democratic principles that members of this Association should thus in effect have no right of appeal concerning actions of the Council or House of Delegates; now, therefore, be it

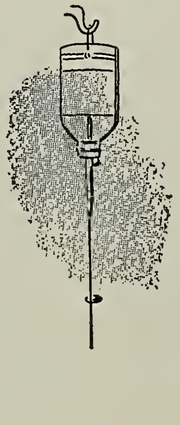
Resolved: That Chapter XII, Section 1 be amended by adding the following:

“Any action taken by the Council or by the House of Delegates may be referred to all of the active members of the Association for their vote for or against repeal of such action if a petition requesting such a referendum is filed with the president of the Association within sixty days after the action is taken and if the petition is signed by a number of active members amounting to more than twice the number of voting delegates at the prior meeting of the House of Delegates. This number of petitioners shall constitute a referring body”; and be it further

Resolved: That Chapter XII, Section 2 be amended by adding the following:

“Whenever a referendum vote is initiated through a petition of appeal the petition shall name an active member as the initiator and that member shall have the privilege of selecting or composing a written argument of 1,000 words or less to be presented with the ballot on behalf of the petitioners.”

ACTION: Referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next Annual Session.



No. 15*

Closed Chest Cardiac Resuscitation And The Industrial Nurse

The California Medical Association and the California Nurses' Association join in making the following statement.

Closed Chest Cardiac Resuscitation must be done by those well trained in the method.

When a physician is not present, the industrial nurse who is properly trained in the Closed Chest Cardiac Resuscitation procedure may promptly apply the procedure if it is indicated. A physician should be summoned, and on arrival he should take charge.

Emphasis is placed upon the need for adequate training of the industrial nurse in the methods of Closed Chest Cardiac Resuscitation and the indications for its use. Written Guiding Nursing Procedures should be developed to cover such situations and be available to each industrial nurse.

Such proper training should come from physicians thoroughly familiar with the technique, its limitations, and its related problems.

Committee on Occupational Health
California Medical Association

December 3, 1962

Comments and Questions Are Welcomed by the Committee

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*This is the fifteenth of a series of articles prepared by the Committee on Occupational Health.

In Memoriam

Anderson, William Nance, Los Angeles. Died November 8, 1962, in Los Angeles, aged 76, of heart disease. Graduate of the University of Nebraska College of Medicine, Omaha, 1910. Licensed in California in 1929. Doctor Anderson was a member of the Los Angeles County Medical Association.

✤

Burk, Earl Elihu, Los Angeles. Died November 10, 1962, in Los Angeles, aged 76, of heart disease. Graduate of the College of Physicians and Surgeons, Medical Department, University of Southern California, Los Angeles, 1914. Licensed in California in 1914. Doctor Burk was a member of the Los Angeles County Medical Association.

✤

Daniels, Donald Dewayne, Pleasant Hill. Died November 3, 1962, in Lafayette, aged 42, of carcinoid tumor of the ileum. Graduate of the University of Southern California School of Medicine, Los Angeles, 1946. Licensed in California in 1946. Doctor Daniels was a member of the Alameda-Contra Costa Medical Association.

✤

Chappell, George E., Sacramento. Died in an airplane crash, November 28, 1962, aged 49. Graduate of St. Louis University School of Medicine, 1938. Licensed in California in 1938. Doctor Chappell was a member of the Sacramento County Medical Society.

✤

Cookson, H. N. (Howard), Arroyo Grande. Died November 11, 1962, in Arroyo Grande, aged 56, of carcinoma of the pancreas. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1939. Licensed in California in 1941. Doctor Cookson was a member of the San Luis Obispo County Medical Society.

✤

Fregeau, Aime Napoleon, Los Angeles. Died December 4, 1962, in Los Angeles, aged 70, of heart disease. Graduate of Tufts College Medical School, Boston, Massachusetts, 1915. Licensed in California in 1920. Doctor Fregeau was a member of the Los Angeles County Medical Association.

✤

Giffen, Hale, Sacramento. Died in an airplane crash, November 28, 1962, aged 53. Graduate of Tulane University of Louisiana School of Medicine, New Orleans, 1943. Licensed in California in 1946. Doctor Giffen was a member of the Sacramento County Medical Society.

✤

Howard, Gordon R., Bell. Died November 20, 1962, aged 62, of coronary occlusion. Graduate of the University of Michigan Medical School, Ann Arbor, 1925. Licensed in California in 1931. Doctor Howard was a member of the Los Angeles County Medical Association.

✤

Lee, Virginia, Hollywood. Died December 2, 1962, aged 47, of heart disease. Graduate of the California College of Medicine, 1962. Licensed in California in 1962. Doctor Lee was a member of the Forty-first Medical Society.

✤

Lucey, Daniel D., Los Angeles. Died December 9, 1962, in Los Angeles, aged 75, of Parkinson's Disease. Graduate of the College of Physicians and Surgeons, Los Angeles, 1913. Licensed in California in 1913. Doctor Lucey was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

Motley, Ernest Gragg, Santa Ana. Died December 4, 1962, aged 83. Graduate of the University of Michigan Medical School, Ann Arbor, 1907. Licensed in California in 1922. Doctor Motley was a retired member of the Orange County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

Reynolds, Frederick Gregory, Los Angeles. Died November 20, 1962, aged 59, from injuries received in an automobile crash. Graduate of the University of Southern California School of Medicine, Los Angeles, 1935. Licensed in California in 1935. Doctor Reynolds was a member of the Los Angeles County Medical Association.

✤

Spittler, Russell O., Lodi. Died November 11, 1962, in Lodi, aged 54, of heart disease. Graduate of the University of Minnesota Medical School, Minneapolis, 1933. Licensed in California in 1945. Doctor Spittler was a member of the San Joaquin County Medical Society.

✤

Toben, Peter A., Los Angeles. Died November 17, 1962, in Beverly Hills, aged 59, of amyotrophic lateral sclerosis. Graduate of Temple University School of Medicine, Philadelphia, 1932. Licensed in California in 1933. Doctor Toben was a member of the Los Angeles County Medical Association.

✤

Zahawi, Faizi K., Los Angeles. Died December 4, 1962, in Los Angeles, aged 40, of a coronary. Graduate of the University of Istanbul Medical Faculty, Turkey, 1944. Licensed in California in 1952. Doctor Zahawi was a member of the Los Angeles County Medical Association.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

ONCE AGAIN the Bureau of Communicable Diseases and the Viral and Rickettsial Disease Laboratory are maintaining a thorough surveillance of influenza in conjunction with the global World Health Organization network.

Through early November, no outbreaks of influenza have been identified. Moreover, absenteeism records of almost 150,000 California school children in selected areas have been normal, as have industrial absenteeism figures.

Deaths from pneumonia and influenza in major California cities have also remained at normal levels, as have all other indicators of influenza activity.

The State Health Department supports the recommendations of the U.S. Surgeon General's Advisory Committee on Influenza regarding immunization, which is encouraged particularly for those in known high risk groups: persons with chronic, debilitating diseases, persons over 45 and especially 65 years of age, and pregnant women.

* * *

Screening of retarded children in California for the condition phenylketonuria has been made possible by a U.S. Public Health Service grant to Childrens Hospital of Los Angeles.

A three-year study will be conducted of retarded children in public and private schools and homes to discover undetected cases of PKU. PKU is a hereditary disease in which the body's inability to use phenylalanine, a part of the protein in foods, usually produces severe damage to the brain, resulting in mental retardation. Detection of PKU is made by an inexpensive urine test.

In cooperation with public health officials, the public schools, private schools, and associations of parents for retarded children, the screening program staff will organize a screening project in each county to make the simple urine test.

Testing is accomplished in a manner so as to cause minimum interruption of the school day. Parents will be fully acquainted with the procedure prior to testing, and will be informed of the results. Where the screening results are inconclusive, follow-up testing will be done by the Metabolic Research Laboratory of Childrens Hospital.

When a suspected new case of PKU is discovered by the urine screening, the family physician will be notified and requested to obtain a blood serum sample so that the laboratory may make a confirmatory test for the disease. Because of the hereditary nature of PKU, all brothers and sisters of a PKU child should also be tested.

If identified early enough—during early infancy—the destructive effects of PKU can be prevented by supplying a special diet which is free of the particular part of protein foods which the child cannot metabolize.

There is some evidence to show that even with older children who have already become mentally retarded, the special diet will tend to improve their behavior, although no changes can be expected in intelligence level after brain damage occurs.

Children with phenylketonuria are now eligible for diagnosis and treatment under the State Health Department's Crippled Children Services. Treatment services may be provided when the diagnosis has been confirmed at one of the approved medical centers, in accordance with that center's recommendation.

Centers at present approved for the treatment of children with this condition include Childrens Hospital of Los Angeles.

* * *

The past 10 years of effective drug treatment has been an era of rapid advance in the control of tuberculosis. However, a new problem has emerged with increasing prevalance of drug resistant strains of mycobacterium tuberculosis.

Since 1954, levels of resistance to one or more of the standard drugs have nearly doubled among cases never before treated. Of specimens currently tested for drug susceptibility in California, up to 40 per cent show resistance to one or more of the standard drugs. Treatment of drug resistant cases involves longer hospitalization and the use of much more toxic and expensive drugs and a higher level of treatment failure.

An essential of successful treatment is expanded laboratory services to determine drug resistance in the newly diagnosed cases, and by repeated laboratory studies to indicate desirable drugs and dosage throughout treatment.

The department has undertaken the surveillance of drug resistance among previously untreated cases, the emergence of resistance among treated cases, and will correlate laboratory tests with clinical findings.

INFORMATION

Arational Behavior and Medical Care*

A Report of the Bureau of Research and Planning, California Medical Association

Testing the hypothesis that arationality on the part of a patient in the treatment of an illness is in direct relation to perceived chance or danger inherent in that illness and is in inverse relation to medical knowledge about that illness, the authors of an unpublished doctoral dissertation conclude that "those who are scientifically more knowledgeable" in the area of medical practice are "also more rational." Arational behavior is categorized as 1) the type that involves the use of, or belief in the efficacy of accepted religious practices for the treatment of illness, 2) the use of some religious charms and trinkets, and 3) the use of ineffective or harmful health foods, herbs, and various compounds.

The authors conclude that an increase in technological discoveries will result in a trend toward greater rationality and more rational behavior in seeking treatment for illness.

Defining arational behavior as "single-ended action which, from the scientific point of view, means are totally inappropriate for an intended end," the authors studied the manner in which a group of mothers responded in treating or securing treatment for their children. The subjects were members of a low income group and the illnesses about which they were queried were one of the following four: poliomyelitis, measles, viral pneumonia and tuberculosis.

The responses of the parents were evaluated and analyzed by pediatricians, with the following classifications of arational behavior developed. The category of "remissive magico-religion" was assigned to the type of person who employed the use of, or belief in the efficacy of, theologically accepted religious practices for the treatment of illness. Examples of this category were found to be Bible reading, praying, visiting a health shrine, self-castigation, and using sacred medals or relics. The term "operative magico-religion" was used to describe the behavior of subjects who employed non-religious charms and trinkets and superstitious actions of various types. The classification "oral-internal medication" was developed to describe the subject who uses ineffective or harmful health foods, herbs, patent medicines and various mixtures such as sugar and vaseline, sugar and turpentine, and milk and honey.

The study reveals that mothers who saw an illness as one which was very dangerous or who classified it as outside the realm of rational competence also tended to engage in practices which were classified as arational. However, arational behavior was also found to be a result of lack of concern about an actual or possible medical problem. One of the findings also reveals that respondents who did not perceive illness as serious tended to consult persons other than physicians such as clergymen, pharmacists, nurses and chiropractors.

Ignorance or the lack of perceived danger of the effects of the four illnesses previously mentioned influenced the type of behavior of the mothers. Tuberculosis was found to result in more arational behavior than any of the other three illnesses.

The study supports previous evidence uncovered by anthropologists and sociologists to the effect that there is a decided relationship between unpredictable circumstances and prayer, magic and fatalism. With respect to this particular study, the evidence indicates that arationality is associated with extended periods of convalescence and with undefinability of the incipient symptomatology. The authors also demonstrate that the subjects who were more medically knowledgeable are less apt to employ arational practices in coping with medical problems than those who are less informed.

Although the authors offer no hope for the complete eradication of arationality in seeking medical treatment, they hold the view—as do other investigators—that arational behavior will diminish as technological and scientific advances are made. The implication is that continual communication with the public on health matters will help achieve this. The factors which may counteract this development, however, include increasing crises, problems of stress, social circumstances over which the individual has little or no control, the increasing body of scientific knowledge which may become increasingly difficult to absorb, and other problems related to the foregoing.

For the edification of the reader, the subjects in the study were those selected from records of the Office of the Commission of Health in New Haven, Connecticut or in the Winchester Tuberculosis Clinic at the Grace-New Haven Community Hospital.

California Medical Association, 693 Sutter Street, San Francisco 2.

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*Lewis and Lopreato, "Arationality, Ignorance and Perceived Danger in Medical Practices," American Sociological Review, Vol. 27, No. 4, August 1962.

NEWS & NOTES

NATIONAL · STATE · COUNTY

FRESNO

Dr. Arthur Howard has been installed as president of the Fresno County Medical Society for the current year, and Dr. Norman E. Tostenson was elected president-elect. Others elected are Dr. J. A. Polhemus, vice-president, and Dr. Ross Willoughby, secretary-treasurer. Drs. Harlan L. Fulmer, Charles Ludwig and Theodore Steinberg were elected to the board of governors for three-year terms.

LOS ANGELES

Dr. Irving Gordon, professor and head of medical microbiology at the University of Southern California School of Medicine, has been named associate dean for medical education, Dr. Clayton G. Loosli, dean of the school, announced at the first of the year.

Dr. Gordon replaces Dr. Paul R. Saunders, professor of pharmacology, who has been made chairman of the new Department of the Biological Sciences in the USC College of Letters, Arts, and Sciences.

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Dr. Louis H. Winer, Los Angeles, was elected vice-president of the American Academy of Dermatology at the annual meeting of the organization which was held in Chicago.

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The 12th Annual Convention of the **American College of Cardiology** will be held in Los Angeles, California, at the Ambassador Hotel, February 27 to March 3, 1963. A joint meeting with the Los Angeles Heart Association has been arranged for Wednesday, February 27.

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Dr. James H. McClure has been appointed professor and chairman of the department of obstetrics and gynecology at the **California College of Medicine,** effective January 1, 1963.

Dr. McClure, formerly professor of obstetrics and gynecology at the University of Alabama Medical College, earned his M.D. degree from Ohio State University College of Medicine in 1950. He served as an instructor there in 1953 and later served on the faculties of Emory University School of Medicine and University of Illinois College of Medicine.

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Officers of the **Metropolitan Dermatological Society** of Los Angeles for 1963 are: President, Dr. John W. Carney; vice-president, Dr. Sidney J. Rose; secretary-treasurer, Dr. Walter S. Green.

New travel and entertainment expense reporting procedures that start this month for 1963 federal income tax returns have necessitated issuance by the California Medical Association of a more detailed expense voucher for use by members engaging in C.M.A. business.

All reimbursed expenses, which continue to be reportable as individual income, must now be much more explicitly detailed. Documentation of such expenses is not required by the C.M.A., but commission and committee members should retain receipts in the event of a tax audit.

Among the reporting requirements of the law are costs of transportation, lodgings, each meal and miscellaneous items. Receipt documentation is required for amounts of $25 or more. Record must be kept of the day of departure and return for each trip (the hour, also, if on *per diem*), the purpose of the trip, and the names of those entertained at meals or otherwise in the amount of $10 or more.

These regulations apply to all expenses of this nature whether for C.M.A. business or not.

SAN FRANCISCO

Dr. M. Coleman Harris, San Francisco, was installed as president of the West Coast Allergy Society at the Society's annual meeting in Portland, Oregon, on December 1, and **Dr. Ben C. Eisenberg,** Huntington Park, was elected president-elect.

The 1963 meeting of the Society will be held in Las Vegas, Nevada, on December 5-7.

GENERAL

The University of California School of Public Health at Berkeley is offering a full-time educational program of 9 to 12 months to prepare **specialists in maternal and child health** and leading to the degree of Master of Public Health. Sponsored by the United States Children's Bureau, the program is primarily intended for physicians, but qualified members of other health professions may be accepted on an individual basis.

Fellowships are available at the School of Public Health, provided by the U. S. Public Health Service. For physicians, the amount of the Fellowship is $400 a month for the student and $30 a month for each dependent.

Further information may be obtained from Dr. Helen M. Wallace, Professor of Maternal and Child Health, University of California School of Public Health, Earl Warren Hall, Berkeley 4.

THE PHYSICIAN'S Bookshelf

TEXTBOOK OF PATHOLOGY—With Clinical Application—Second Edition—Stanley L. Robbins, M.D., Professor of Pathology, Boston University School of Medicine; Associate Director of the Mallory Institute of Pathology, Boston, Massachusetts; Lecturer, Harvard Medical School and Tufts University School of Medicine. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1962. 1190 pages, $19.00.

This is the first revision of a successful textbook of pathology that was first published in 1957. The book is designed to present general and special pathology as they are usually studied by undergraduate medical students, and this is accomplished in a concise readable fashion, with an appropriate number of well-chosen gross and photomicrographic illustrations of excellent quality. A relatively small number of references represent classical and recent writings that elaborate upon the subject material. A useful feature of the bibliography is a one-phrase comment concerning the nature of each reference.

Chapters on special pathology constitute about 2/3 of the book and include as special topics "Diseases of Infancy and Childhood" and "The Oral Cavity." These presentations are predominantly descriptive and deal with causes and mechanisms without much discussion of different points of view. Paragraphs on the clinical course of a number of conditions are included.

The book refers to a large number of diseases, so many that very brief presentations are the rule. This is perhaps the principal criticism of this as a reference book. As a textbook it is easy to read and presents an up-to-date view of pathology.

Alvin J. Cox, M.D.

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CIBA FOUNDATION STUDY GROUP NO. 9—Progesterone and the Defence Mechanism of Pregnancy, in honour of Dr. G. W. Corner. G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Margaret P. Cameron, M.A., Editors for the Ciba Foundation. Little, Brown and Company, 34 Beacon Street, Boston, Mass., 1961. 108 pages, $2.50.

This is an exceedingly interesting report of a symposium on progesterone held last year under the auspices of the Ciba Foundation. The chairman was Dr. George M. Corner, the principal participants were A. Csapo, J. Zander, D. M. Needham, H. Kuriyama and C. S. Russell. Many other well known persons were present to take part in the discussion.

Csapo's subject was "Defence Mechanisms of Pregnancy." Evidence of various types was presented to support the concept that placental progesterone is a key substance in a defense mechanism which controls the maintenance and termination of human pregnancy and that at least a part of this endocrine control is due to a local effect upon the myometrium. This was a superb presentation and provoked many interesting questions.

Zander ably discussed the "Relationship Between Progesterone Production in the Human Placenta and the Fetus," and showed that the fetus is an important site for the metabolism of progesterone produced by the placenta.

Dorothy Needham discussed the "Molecular Aspects of the Contractile Mechanism of the Uterus and its Changes During Pregnancy." A comparison was given of the uterine contractile mechanism (myosin, action and actomyosin) with those of the corresponding proteins from skeletal muscle.

Hirosi Kuriyama described "Recent Studies on the Electrophysiology of the Uterus." His studies concerned the membrane and action potentials in the uterine myometrium and were made at the cellular level. The effects of various ions, hormones and physical alterations such as stretch and temperature were described. The experiments suggested that progesterone exerted its pregnancy maintenance effect by increasing the threshold to stimulus, causing hyperpolarization and blocking propagation.

The clinical side of the picture was presented by Professor C. S. Russell of Sheffield who posed many clinical facts which he felt were incompatible with the mechanisms suggested by the experimentalists.

There followed a very interesting and enlightening discussion by the essayists and by other authorities in attendance.

Anyone interested in the physiology of reproduction and/or in obstetrics would be well repaid to read this excellent symposium.

D. G. Morton, M.D.

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PSYCHOANALYSIS IN GROUPS—Alexander Wolf and Emanuel K. Schwartz. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 326 pages, $8.00.

This book on group therapy or what the authors call "Psychoanalysis in Groups," describes quite adequately what takes place in a group of patients undergoing psychotherapy. Objection might be raised to the use of the term psychoanalysis in describing group therapy, as the term has generally been restricted to a special type of treatment carried on by a qualified psychoanalyst with one patient and involving intensive and extensive exploration of the patient's unconscious mind as revealed through the transference neurosis. Because Drs. Wolf and Schwartz employ in their groups certain of the techniques used in psychoanalysis, such as free association and dream analysis, they seem to believe that treatment in groups is essentially the same as in individual psychoanalysis. This would be disputed by many analysts. The type of therapy they describe is more generally called psychoanalytic group psychotherapy.

In the first chapter on "Basic Design" the authors give a good exposition of group therapy, explaining how it works and giving in some detail the advantages of group therapy over individual therapy. They describe the techniques they use, the composition and the size of groups which they feel are most efficacious. They make it clear that they are concerned with depth therapy in groups and not in superficial, supportive treatment. They are obviously enthusiastic about group psychotherapy and feel it has many benefits which individual therapy does not have. They cover the benefits and advantages very well.

In the following chapters they elaborate on what they have covered in the first chapter, that is the structure of groups, the process of group therapy, the differences between individual and group therapy, the techniques used, the use of alternate sessions with the leader absent, a highly controversial technique but one which they favor. In these chapters there is a great deal of repetition, with particular stress on the benefits of group therapy as the authors practice it. At times their assertions amount to a polemic against group therapists who do not agree with their methods and many pages are devoted to criticisms of analysts whom they regard as "too authoritarian" and unwilling to permit patients freedom of action and thought. There is throughout the book very little evidence given for their assertions. More clinical data from actual group sessions, in my opinion, would have carried more conviction of their theses than pages of criticism of those who, they assume, differ from them.

They give many advantages that groups consisting of heterogenous patients have over those with homogeneous patients and inveigh against homogeneity in groups with great vigor. In line with this they strongly decry the tendency to conformity among Americans. In much of the book the tone is a polemical one rather than an objective, scientific one, They are strong advocates of psychoanalysis in groups as they describe it, of group therapy alone and not concomitant with individual therapy, of diversity as opposed to sameness in the composition of groups and the use of alternate group sessions without the therapist present.

This is not a primer in group psychotherapy, nor does it deal with groups in general or group dynamics in the broad sense. These subjects are touched upon and references from the literature on group dynamics are cited. The authors seem to feel that group dynamics should be de-emphasized as not playing a significant role in group psychotherapy. This book is not recommended for the general practitioner and would probably be of interest only to psychiatrists and particularly those with experience in and a predilection for group psychotherapy.

ROBERTA CRUTCHER, M.D.

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CLASSICS OF CARDIOLOGY (former title: Cardiac Classics)—A Collection of Classic Works on the Heart and Circulation with Comprehensive Biographic Accounts of the Authors—Frederick A. Willius, M.D., M.S. in Med., Former Chief, Section of Cardiology, Professor Emeritus of Medicine, The Mayo Foundation for Medical Education and Research, The Graduate School, The University of Minnesota; and Thomas E. Keys, A.B., M.A., Librarian, The Mayo Clinic; Assistant Professor of History of Medicine, Mayo Foundation for Medical Education and Research, The Graduate School, The University of Minnesota. Dover Publications Inc., 180 Varick Street, New York 14, N. Y., 1961. 2 Volumes, $2.00 each Volume. (Paperback Edition) Volume I, 399 pages; Volume II, 459 pages.

This is a collection of classic works on the heart and circulation, formerly published in hard cover under the title *Cardiac Classics*. It is a two-volume paperback for a very reasonable price, published by the Dover Publications Inc. of New York. These two volumes present fifty-two contributions by fifty-one masters of the past preceeded by short but comprehensive biographic accounts of the authors. The parent book of *Cardiac Classics* has been out of print for years and all students are indebted to the publishers for reprinting the book in this inexpensive edition.

The writings of those great men, who first made the clinical observations which led to the present practice of medicine, have excited all students of medicine and the current volume presents passages from the original writings of a whole host of old masters which will be of great interest to the physician of today. The reader will obtain great pleasure from reading the precise words by which Harvey described the circulation of the blood; Hales obtained the blood pressure in animals; Heberden described angina pectoris; Auenbrugger developed the importance of percussion of the chest; Withering accounted for his use of the fox glove; and many others. The clarity of the writing and the precision of thought of many of the men who made important discoveries is indeed impressive and will be a great stimulus to the student investigator of today.

Portraits of each of the great men are included and the biographies are extremely pertinent and present each man's work in perspective.

These two volumes can be most highly recommended to all students, physicians, and research workers as a compilation of the epic-making contributions of the great men that came before us. The original writings, translations, and frontispieces are extremely well done, and we concur with the authors that the rather complete reproduction of the works is of great value and permits the reader more fully to appreciate and understand the personality and philosophy of the authors.

MAURICE SOKOLOW, M.D.

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GYNECOLOGY—Langdon Parsons, M.D., Professor of Obstetrics and Gynecology, Boston University School of Medicine; Chief of Gynecology, Massachusetts Memorial Hospitals; and Sheldon C. Sommers, M.D., Pathologist, Scripps Memorial Hospital. W. B. Saunders Company, Philadelphia, 1962. 1250 pages, $20.00.

Approximately 2400 years ago the son of an Athenian midwife departed from the traditional methods of education and taught his students by a process of systematic questioning. Since that time the Socratic method has been used by inspired teachers to stimulate their pupils. In this volume Dr. Parsons, a gynecologist, and Dr. Sommers, a pathologist, combine their lifelong experience in one of the Boston University teaching hospitals, and following in the footsteps of Socrates they depart from the traditional methods of textbook writing and instead ask a series of thought provoking questions, which they then in turn answer. This has produced a text which is a skillful blending of logic, scientific facts, statistical data and clinical observation. The authors also depart from tradition, by a unique sequence of presentation relating the gynecological disorders considered in the various periods of life. As Shakespeare has so aptly noted, "And one man in his time plays many parts, his acts being seven ages." The authors divide their book into seven parts, and in each part consider the gynecological problems peculiar to one of the seven decades of life. The ample section on gynecological problems in infancy and childhood is especially welcome, for the authors discuss many aspects of this important subject of pediatric gynecology, which is not usually considered in the ordinary textbook of gynecology, or at best only glossed over in a few words. Chapters on examination of the newborn female, and young female children, as well as chapters on congenital abnormalities, intersex problems and sexual precocity are of particular value. Also of merit is a lucid chapter on the sex chromatin variants, which includes recent developments in this rapidly changing discipline. Under gynecologic problems of puberty and adolescence chapters on normal endocrinology and steroid metabolism, the various aspects of menstrual dysfunction, hirsutism, and pelvic pain are presented. The discussion is written from a comprehensive patho-physiologic point of view. In the section on gynecological problems of young women, sterility, pelvic infections and certain disorders of pregnancy are adequately presented. Of particular interest is an excellent chapter on sexual physiology which serves as a background for a discussion of marital counseling and the management of sexual problems, another area which is rarely adequately treated in gynecological texts. Other valuable chapters include those on reproductive tract neoplasms, the management of the menopause, and of problems in geriatric gynecology. A generous documentation of the facts presented is given with carefully selected references placed at the ends of the chapters, and these references are conveniently subdivided under subject headings. The index of 54 pages has obviously been carefully compiled and cross-referenced, and adds considerably to the utility of the text.

Some readers may regret the absence of the usual textbook section on operations. The authors, however, are unapologetic about this omission, as they state this is not a surgical atlas and their decision has much to commend it. In relation to the overall excellence of this full presentation, the small points of dispute melt into insignificance, as there is much to commend and little to criticize. Due to the arrangement of diseases into various decades there is of necessity some duplication, as in each section chapters are devoted to the problems of bleeding in that period of life. This of course necessitates some jumping around in order to follow certain topics. In some chapters there is also seemingly undue repetition, as in the chapter on carcinoma of the cervix where the fact that undetected lymph node metastasis in State I carcinoma of the cervix is seen frequently is mentioned six times.

Despite the fact that this marks at least the tenth textbook of gynecology to be published in the English language in the past three years, we agree with Dr. Miegs' introductory comment that this is truly one of the great books of recent years, and in spite of the authors' prefatory remarks that they will promise never to do this sort of thing again, we predict that this most elegant and useful text is likely to reappear again in successive editions, to which we may look forward. This important book can be warmly recommended to all students, practitioners and gynecologic specialists.

Lawrence D. Longo, M.D.

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TEXTBOOK OF ENDOCRINOLOGY—Third Edition, Illustrated—Edited by Robert H. Williams, M.D., Chief, Endocrinology and Metabolism Division, and Physician-in-Chief, University Hospital; Executive Officer and Professor of Medicine, University of Washington Medical School, Seattle, Washington. With contributions by twenty-one authorities. W. B. Saunders Company, Philadelphia 5, Pa., 1962. 1204 pages, $21.00.

A vast amount of rapidly accumulating information indicates that hormones influence every body cell and that endocrine function is a factor in almost every major disease. The tremendous progress in this field during the past few years made obsolete the Second Edition of William's *Textbook of Endocrinology*, published in 1955. The Third Edition is, therefore, essentially a new book, with an expansion of its contents from 776 to 1004 pages. More than 70 per cent has been written by new authors and much of the remainder has been rewritten. New authors have written the chapters on the pituitary, testes, ovaries, pancreas, neuroendocrinology, and laboratory tests, and there are new co-authors for the chapters on the thyroid and parathyroids. There are eight new chapters, with almost entirely new content or approaches. One chapter, "Disorders in Sex Differentiation," summarizes the information in this interesting field. Similarly, "Genetics and Endocrinology" covers this area. Two chapters summarize the significant effects of hormones upon protein metabolism and upon water and electrolyte metabolism. Recent progress has made it desirable to include individual chapters on "The Pineal Gland," "Hormones and Cancer," and "Hypoglycemia."

The chapter dealing with obesity in previous editions has been extensively enlarged to deal with Lipid Metabolism and Lipopathies, in recognition of the prominent role of the endocrines in this field. Consideration is given to basic aspects of various phases of lipid metabolism and to disorders in lipid metabolism (lipopathies), including atherosclerosis, obesity, xanthomatosis, and sphingolipidosis.

One chapter deals with endocrine problems in children, and two short chapters deal individually with the general principles and laws of endocrinology and general principles in the diagnosis and treatment of endocrinopathies. In this last chapter, commonly used endocrine products are considered. Several chapters discuss pseudoendocrine disorders and the use of hormones (glucosteroids, sex steroids) for treating such nonendocrine disorders as cancer, collagen diseases, and allergic disorders.

The reviewer considers this an outstanding text. It covers an enormous amount of material. Despite the general excellence it is sometimes difficult to isolate individual endocrine problems in the contents of the book. The use of more tables is suggested, e.g., tables of the different tests of adrenal function listing their normal values, physiological and pathological variations and significance.

William's *Textbook of Endocrinology* is recommended highly to internists, general practitioners, and students with an interest in endocrinology.

Edgar Wayburn, M.D.

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SKIN SURGERY—Second Edition, Thoroughly Revised—Ervin Epstein, M.D., Associate Clinical Professor of Dermatology, University of California Medical School; Formerly Associate Clinical Professor of Medicine (Dermatology), Stanford University Medical School; Chief of Dermatology and Syphilology at Highland-Alameda County Hospital. Lea & Febiger, Washington Square, Philadelphia 6, Pa., 1962. 339 pages, 472 Illustrations on 175 figures and a colored plate, $10.00.

Dr. Epstein called attention in the preface to the first edition of this book, which was published in 1956, that over twenty per cent of patients seen in the practice of dermatology can be treated by some surgical method. He noted, also, the lack of adequate training in surgical methods in many of the resident programs for dermatologists. A great many operations on the skin are done by those in general practice or in other medical specialties. Except, perhaps, in cold steel surgery, the training of this large group in the various modalities of skin surgery also leaves much to be desired.

This book represents an attempt to present for all those concerned the indications and techniques for all of the various dermatological surgical procedures.

Dr. Epstein has, himself, written seven of the twenty-one chapters in this 336-page book and collaborated in one more. The other thirteen chapters have been contributed by others (fifteen in all) whom he chose because of their training and experience in the topics presented.

Dr. Epstein notes that he did not edit the manuscripts of the author or authors of the various sections to make them conform to his beliefs. This policy allowed some overlapping of material and some differences of opinion to be expressed. As he says, "there is more than one way to skin a cat."

The book is divided into three main parts: (1) Cold Steel Surgery, (2) Electrosurgery, (3) Special Techniques.

In Part I there are chapters on the general principles of skin surgery and on the physical set-up and equipment of an office surgery. There are two chapters on plastic surgery and transplantation of skin and one on the surgical treatment of advanced visible cancer. It is recognized that many of those using this book will not perform some of the more complicated procedures detailed in these and other chapters. They are included as a guide to what can be accomplished with lesions too large for simple excision or too advanced for other minor surgical approach. The biopsy is given especial attention.

Part II opens with a chapter on endothermy or electrocoagulation (surgical diathermy). It includes a short, but excellent review of the physics of electrosurgery in general. Cautery excision and electrodesiccation (fulguration) and curettage are next presented. This section concludes with a discussion of epilation by both biterminal high frequency electrocoagulating current and by electrolysis (surgical galvanism).

In Part III Dr. Frederic E. Mohs presents "The Chemosurgical Method for the Microscopically Controlled Excision of Cutaneous Cancer" which he originated. Dr. Epstein then does an excellent job with the subject of dermabrasion using a motor driven wire brush or serrated steel wheel or diamond fraise. Superficial chemosurgery using chemical cauterants such as phenol or diluted trichloracetic acid has been much publicized recently and is fully discussed in this edition. The next chapter on Cryosurgery describes the use of solid carbon dioxide and liquid nitrogen.

Finally, therapeutic tattooing, acne, surgery, surgery of the nails, surgical treatment of chronic hidrodenitis suppurativa and surgical treatment of baldness are presented.

The book is attractive and well done. The paper and printing are of excellent quality and the numerous diagrams, charts and photographs are good. I think this book achieves its purpose and is very much worth while.

HERMAN V. ALLINGTON, M.D.

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PSYCHOANALYSIS OF BEHAVIOR — COLLECTED PAPERS, Volume Two: 1956-1961—By Sandor Rado, M.D., D. Pol. Sc., Professor of Psychiatry and Dean, The New York School of Psychiatry; Formerly, Professor of Psychiatry and Director of The School of Graduate Psychiatry, State University of New York, Downstate Medical Center; Clinical Professor of Psychiatry and Director of the Psychoanalytic Clinic for Training and Research, Columbia University. Grune & Stratton, 381 Park Avenue South, New York 16, N. Y., 1962. 196 pages, $6.50.

The nineteen papers in this second volume by an eminent physician and teacher range over a variety of psychiatric topics. Because of the introductory nature of some of them, such as that on "The Contributions of Psychoanalysis to the Medical Study of Behavior," medical practitioners in general are likely to find this volume of more interest than will psychiatrists. It is, however, not in any sense an organized beginning text. Some of the papers are on specific clinical and theoretical problems, such as "Narcotic Bondage," "Sexual Anesthesia in the Female," etc.; and several are purely theoretical. There are some worthy clinical tidbits, sometimes salvaged from colloquia in which the author participated; for example, Dr. Rado's words to an overconscientious masochistic patient. "Now look, you are *overconscientious*. Who benefits by that? No one. Who is damaged by it? You, and very often others. I can assure you, you were not born to behave this way. This pattern has been forced upon you until it became your 'second nature.' Underneath, the resources of a healthy person are still available. You can learn how to shed your 'second nature' and at long last develop your real self. It would be well worth the effort. Think about it."

The *Psychoanalysis of Behavior* is possibly a misnomer for this book. None of these papers, so far as the reviewer could determine, appeared in any of the psychoanalytic journals. And Dr. Rado certainly does not dwell on the developments of the past fifteen years in ego psychology. Dr. Rado often substitutes his own terminology for familiar psychoanalytic terms; for example, the "unconscious," "pleasure principle," and "repressed" of Freud become the "nonreporting range of the psychodynamic cerebral system," "hedonic self-regulation," and "retroflexed" in Dr. Rado's "adaptational psychodynamics." There does not seem to be any particular gain in clarity or scientific preciseness in this lingo. On page 42 the reader may be left with a misunderstanding when Dr. Rado says that in his later revisions of theory Freud "named the unconscious 'the id'." These terms are not synonymous and were not used by Freud as being coextensive.

In his paper on psychoanalytic education Dr. Rado leaves the impression that he, Heath, and a few others have been largely responsible for psychoanalytic education in the United States, virtually ignoring the role of the American Psychoanalytic Association and its constituent institutes and societies. Similarly, in the index and bibliographies the names of Freud and Rado are not inconspicuous but there is nearly a complete absence of the names of recent significant contributors to the psychoanalytic literature. Such names as Anna Freud, Karl Menninger, or Otto Fenichel—to name a few of the many conspicuously absent—do not even appear.

DAVID W. ALLEN, M.D.

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HANDBOOK OF PSYCHIATRIC TREATMENT IN MEDICAL PRACTICE—Nathan S. Kline, M.D., F.A.C.P., Director of Research, Rockland State Hospital, Orangeburg, N. Y.; Department of Psychiatry, Columbia University, College of Physicians and Surgeons; and Heinz Lehman, M.D., Clinical Director, Verdun Protestant Hospital, Montreal; Department of Psychiatry, McGill University Faculty of Medicine. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1962. 124 pages, $3.50.

In this slim (124 pages), crisp, direct book the authors attempt to provide the nonpsychiatric physician with a practical guide for the diagnosis, treatment and management of emotional disorders, both mild and severe, seen daily in the general practice of medicine.

This is deliberately and unashamedly a "how to do it" book, written in question and answer form. The authors recognize and emphasize that the management of many psychiatric conditions properly falls within the domain of the general physician and they proceed to instruct him in a straight-forward manner about the practice of psychological medicine. The style is simple and clear and they "talk the doctor's language." By avoiding problems of theory they are able to compress into relatively few pages a good deal of useful factual information, particularly about drug treatment.

The book is divided into five sections. The first two sections attempt to outline how much psychiatry the medical practitioner may safely practice and the conditions for referral of a patient to a psychiatrist. Section III refers to general principles of treatment and deals primarily with the selection and use of appropriate psychopharmacologic agents, their indications, contraindications and side effects.

Part IV gives a thumbnail description of some of the major psychiatric entities (depression, schizophrenia, cerebral arteriosclerosis and senile psychosis, the neuroses, alcoholism) and of their treatment. Part V is an appendix which lists psychopharmacologic agents in current use, their usual dosages, their generic and proprietary American, Canadian and English names.

The bias of the authors is clearly in favor of the pharmacologic treatment of psychiatric disorders. Although the indications for psychotherapy and even psychoanalysis are mentioned (briefly) the reader is left with the impression that the treatment of the psychiatric patient is primarily a matter of choosing the right drug and the right dosage and anticipating and controlling side effects. Little is said that would emphasize to the practitioner that much psychiatric illness is primarily an expression of interpersonal dissatisfaction and that psychotherapy, in some form, is the cornerstone of treatment. Another point that many would question is the authors' contention that the general physician should treat the major psychoses, depression and schizophrenia. Undoubtedly he may have to do so in emergencies, but otherwise this does not seem advisable. He can be most useful when dealing with the milder neuroses and situational maladjustments and these are plentiful enough! With the understanding that the book limits itself primarily to the drug treatment of psychiatric disturbances it contains sound information, compactly presented, which the practitioner will find helpful.

Pietro Castelnuovo-Tedesco, M.D.

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AN ATLAS OF ANATOMY—By Regions: Upper Limb, Abdomen, Perineum, Pelvis, Lower Limb, Vertebrae, Vertebral Column, Thorax, Head and Neck, Cranial Nerves and Dermatomes—Fifth Edition—J. C. Boileu Grant, M.C., M.B., Ch.B., Hon.D. Sc. (Man.), F.R.C.S. (Edin.), Professor Emeritus of Anatomy in the University of Toronto and Curator of the Anatomy Museum; Visiting Professor of Anatomy in the University of California, Los Angeles. The Williams & Wilkins Co., Mt. Royal and Guilford, Baltimore 2, Maryland, 1962. 665 figures and 19 pages of index to figures, $19.95.

One of the main criticisms of the first edition of Grant's Atlas was that it was incomplete, especially when compared with such standard atlases as Spalteholz, Toldt, and Sobotta-McMurrich. This criticism by now has lost much of its validity, because the number of illustrations has increased with each successive edition. Whereas the first edition contained only 277 figures, the fourth contained 634, and the fifth 663.

In the Preface to the Fifth Edition, it is stated that every illustration has been re-engraved, that some have been enlarged, that a few have been reduced, and that seven have been replaced.

The author's adoption of the Nomina Anatomica of 1955 necessitated a number of changes in labels and in the legends. However, the newer terminology was not completely adopted. For example, in Figure 313 the cuneiform bones are still labelled as first, second, and third, rather than as medial, intermediate, and lateral, respectively, and in Figure 540 Sternomastoid was not changed to Sternocleidomastoid.

Welcome additions to the Fifth Edition include the citations of the incidence of some of the more common variations and anomalies. Furthermore, the inclusion of a list of references indicates that the author has reviewed the literature and that the illustrations are in keeping with current anatomical concepts.

A student beginning the study of anatomy might be puzzled by certain omissions and disagreements with current textbooks. Although dissections of the perineal region of both sexes are illustrated, none of the figures shows the deep perineal fascia, and the deep perineal pouch is incorrectly labelled. It should be made clear in Figure 194 that it is the Deep, rather than the Superficial, Transversus Perinei which is shown in the illustration. It might be clear from Figure 299 which of the prepatellar bursae is meant, but it is not clear from the label. It is unfortunate that centrum tendineum perinei was not accurately translated as tendinous center of the perineum, rather than as the inappropriate tendon of the perineum.

These criticisms are relatively minor and detract very little from the excellence of this atlas. As in the case of previous editions, the Fifth Edition has the distinct advantage of being arranged on a regional basis. Also, the English terms used in the labels and legends are more easily understood by American and British students than are the Latin terms of official terminologies. This edition of Grant's Atlas will undoubtedly be widely accepted by students of anatomy, by their instructors, and by any one wishing to review this subject.

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THE ETIOLOGY OF IDIOPATHIC EPILEPSY—Harold Geist, Ph.D., Foreword by Charles Kram, Ph.D., Executive Director Federal Association for Epilepsy. An Exposition-University Book. Exposition Press Inc., 386 Park Avenue South, New York 16, N. Y. 297 pages, $5.00.

This book can be roughly divided into four sections, the first being discussion of the history and diagnosis of epilepsy. The second is devoted to psychological testing and a fairly lucid discussion of Freudian principles. The third and most extensive section consists of a discussion of various psychological tests used in the study and the fourth, an appendix, illustrating some case histories and examples of the protocols of several tests used.

The author's style makes reading quite difficult. The major portion of the first half of the book is devoted to quoting excerpts of a variety of research papers. The author's comments and interpretations of the quotes unfortunately suffer from his lack of medical training in the field of neurophysiology. There is a very brief section with some forms of treatment which clearly shows that the author has had little or no clinical experience with such therapy.

It is the author's thesis that "the genesis of unknown (idiopathic) epilepsy is closely bound up, if not identical, with hysteria." Throughout the book he discusses hysterical seizures quite frequently and at times seems to attribute causes of hysterical seizures to true idiopathic epileptic seizures. The primary theory postulated is that a true idiopathic convulsive seizure is of purely psychological origin and is due to "the co-existence of two unacceptable trains of thought, one of which has become unacceptable to the harsh demands of the other." The author postulates that the two unacceptable trains of thought cause such conflict that the patient escapes into a temporary state of unconsciousness and the convulsion which then occurs allows the psychological energy generated to be dispelled. The trains of thought are felt to be primarily of a sexual nature. In an attempt to prove this he uses a small series of patients he apparently has seen over a period of many years, apparently for testing only, and divides them into three categories; "known," "probable," and "unknowns" (as to cause of seizures).

The latter group are the equivalent of the "idiopathic epileptic." Several case summaries of patients placed in each of these groups are given in brief form but, unfortunately, the case histories suggest that the author's classification of some of these is inaccurate. Although psychologist Geist states early in his book that he will show the relationship between idiopathic epilepsy and hysterical attacks, he fails to do so in a convincing manner. The material used does not justify the conclusions and psychologist Geist often uses certain alleged personality findings in specific tests to prove his personal opinions. Although at times he makes a feeble effort to show a cause and effect relationship between a seizure and some psychological attribute of an individual, the material presented either justifies no conclusion as to cause and effect, or suggests coincidental occurrence.

In summary, this book represents psychologist Geist's personal theory as to the cause of idiopathic convulsive seizures but the author presents no convincing proof as to the validity of his theory. It is not felt that this book will be useful to physicians either as an aid in treatment or in further understanding of epilepsy. The book is far too complicated for lay persons working in this field.

Psychologist Geist says "The psychoanalytic literature on the epileptic is confusing, entirely speculative, and almost without scientific foundation." Unfortunately, this situation has not been improved by the present volume.

Willard H. Pennell, M.D.

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PEDIATRICS—Thirteenth Edition (Formerly Holt's Diseases of Infancy and Children)—L. Emmett Holt, Jr., Professor of Pediatrics, New York University School of Medicine; Rutin McIntosh, Carpentier Professor Emeritus of Pediatrics, Columbia University; and Henry L. Barnett, Professor and Chairman, Department of Pediatrics, Albert Einstein College of Medicine, Yeshiva University. Appleton-Century-Crofts, Inc., 34 West 33rd Street, New York 1, N. Y., 1962. 1395 pages, 47 pages of index, $18.00.

For American pediatricians there have long been two outstanding standard texts, known for brevity as Holt and as Nelson. In a field so rapidly expanding it would appear that fairly frequent revisions of the texts are desirable, a need that has been met by Nelson, which is revised every 4-5 years, with notable success. In the case of Holt the nine-year interval between the twelfth and the present, thirteenth, edition has been much too long and has had the unfortunate result of imminent obsolescence. This result is now largely offset by the present revision in which major changes have been wrought by the three editors, one of them new, Henry Lewis Barnett, Professor of Pediatrics at Albert Einstein Medical College, and some 81 collaborators, with putative expertness in special fields. The controlling influence of the three main editors is manifest in a reasonable and on the whole pleasing uniformity of style that is in harmony with the long-established tradition of the text.

While the general arrangement of the book remains little changed a great deal of rewriting of old sections and insertion of new material is evident, all reflecting the wide progress made in the pediatric field during the past decade. Extensive changes have been made in such sections as diseases of the heart, the endocrine system, the genito-urinary system, anomalies of sex differentiation, and of metabolism. It is interesting to note that the authors regard the indications for tonsillectomy as having virtually disappeared. The list of new articles includes aldosteronism, blastomycosis, cat scratch disease, cytomegalic inclusion disease (but without noting its relation to mental retardation and cerebral palsy). ECHO and Coxsackie virus infections, hereditary nephritis, infantile nephrosis, leucine-sensitive hypoglycemia, kwashiorkor, staphylococcus infections, and several others. One misses the master hand of Frank Ford in the neurological portion of the text.

The chapter on Genitourinary Diseases, notably the sections on nephritis, is quite outstanding, being extensively rewritten, probably by the new editor. The chapter on the Circulatory System has also been greatly enlarged and brought up to date in most respects. It merely illustrates the rapid progress in this field that in a volume just issued, but prepared at least several months ago, there is no mention of hypothermia as an adjunct to open heart surgery. The anomalies of metabolism and enzymatic aberrations are extensively dealt with. Anderson's failure to mention Amphotericin B in the treatment of coccidioidomycosis is peculiar. It is curious to observe Robert Ward's very conservative remarks on the merits of the live attenuated vaccines for poliomyelitis, especially considering Ward's earlier close association with Sabin. The chapter on Accidents and Poisonings has been completely rewritten by Jacobsiener, and greatly improved.

Reviewing any large and comprehensive text is necessarily a haphazard task and minor faults are never hard to discover. But my impression of the book as a whole is that, with rare exceptions, it is an excellent revision, covering adequately and authoritatively the main features of modern pediatrics in a way that the pediatric specialist as well as the general practitioner will find valuable as a source of reliable and useful information. Having been devoted for many years to the Holt text and distressed to see it fall behind other texts as a result of too-long postponed revision, I am particularly pleased to note its admirable renascence, and to be able to recommend it with enthusiasm.

Harold K. Faber, M.D.

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NOVAK'S GYNECOLOGIC AND OBSTETRIC PATHOLOGY—With Clinical and Endocrine Relations—Fifth Edition—Edmund R. Novak, A.B., M.D., Assistant Professor of Gynecology, The Johns Hopkins Medical School; Gynecologist, Johns Hopkins, Bon Secours, Hospital for the Women of Maryland, and Union Memorial Hospitals, Baltimore, Maryland; and J. Donald Woodruff, B.S., M.D., Associate Professor of Gynecology, The Johns Hopkins Medical School, Associate Professor of Pathology, The Johns Hopkins Medical School; Gynecologist, Johns Hopkins and Union Memorial Hospital, Chief of Gynecology, Hospital for Women of Maryland, Baltimore, Maryland. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1962. 713 pages, 761 illustrations, 31 in color, $16.00.

The Fifth Edition of this time-honored contribution to the knowledge of gynecologic and obstetric pathology presents the subject in a new dress. The style of printing and titling used makes for easier and faster reading and, as such alone, presents a decided improvement over previous editions. With several exceptions, the substance of the present edition varies little from what Emil Novak set down in his original version. Titles have been modernized in line with advancing knowledge as, for instance, the change from Kraurosis and Leukoplakia to Atrophic and Hypertrophic Changes of the Vulva, just as the interpretation of the histology of cervical glands has been discussed from a modern point of view.

Special attention has been given to the interpretation of changes in cervical and endometrial glands in response to hormonal and gestational stimuli; pseudo-anaplastic and true anaplastic changes have been differentiated for easier understanding of their meaning, including the interpretation and significance of carcinoma in situ in pregnancy. In the discussion of the histo-pathology of the endometrium newer findings of such chemical changes as alkaline phosphatase in growth variation of cells are well described.

Important changes have been made in the chapter on sarcoma of the uterus to clarify the incidence, cell differentiation and prognosis of this treacherous disease. A discussion of ovarian tumors covering several chapters brings the subject down to an easier understanding. A rearrangement of the cardinal factors which characterize benign and malignant ovarian tumors including the Stein-Leventhal syndrome, the various dysontogenic tumors, such as Krukenberg, Brenner, dysgerminomas, feminizing and masculinizing tumors and the adrenal types as well as the various teratomatous, is of real help in understanding the vagaries encountered with these tumors. A sensible discussion of classifying ovarian tumors is well worth reading.

A. E. L. Nesbit has revised the chapter on fertilization and placentation with special attention to chorionic aberrations encompassing abortion, mole formation and choriocarcinoma. John K. Frost has considerably enlarged the chapter on the cytopathology of the vagina and uterus. His detailed descriptions of the various cell changes encountered are most valuable and make for a ready understanding of this complicated subject.

All in all, your reviewer feels certain that his old friend Emil Novak would have been happy with the changes presented in the Fifth Edition of his classical contribution to the knowledge of the pathology of obstetrical and gynecologic conditions.

W. B. Saunders Company, Publishers, presents Novak's Pathology in the best tradition of their company.

Ludwig A. Emge, M.D.

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MEDICAL PHYSICS—Volume III—Editor, Otto Glasser, Ph.D., Diplomate in Radiological Physics, American Board of Radiology; Professor of Biophysics, Frank E. Bunts Educational Institute; Head, Department of Biophysics, Cleveland Clinic Foundation; Member, Council on Medical Physics, American Medical Association. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1960. 734 pages, $25.00.

This is a big book (nearly 5 pounds)—nothing to read in bed; but you'll use it for reference while sitting at a table. The typography is excellent, with text in 8-point and references in 6-point. The line cuts were mostly made under the editor's direction and are not so much reduced as to make the labels hard to read.

In his modest preface, Glasser calls this a complement and supplement to Volumes I and II, published in 1944 and 1950, respectively. It is a tribute not only to Glasser's scholarship, energy and courage, but also to the modern physician's growing interest in physical science. For some subjects he has obtained new authors; for others he merely refers the reader to Vol. I or II, or has had the original author bring it up to date.

Among the 180 contributors one finds many familiar names. All are American (one Canadian). The town and institution are given for each, to give some inkling of authority. This might be an invitation to the reader to quarrel with the author or to query him further.

The serial Table of Contents lists the essays, omitting those entered by title only. There are 177 of them. Many essays have more than one author, and, conversely several authors have contributed more than one essay.

A most useful feature is a Classified Table of Contents with 47 broad headings covering lists from four lines to four pages in length. I'd think this a boon to browsers. My own inclination, however, is to leaf through the text and let my eye pick up an intriguing title or line cut.

Three pages of Normal Clinical Values cover blood (cytology and chemistry), urine and renal and hepatic function, C.S. fluid, feces, etc. Curiously the title Pulmonary is skipped, here, in text and even in index. But one finds plenty under the title Respiratory System, well indexed also under heading Lungs. There, under External Respiration one finds normal values of vital capacity, etc. and a broad and deep discussion of energetics, gas exchange and O_2 transport, with all the mathematical models. Methods of gas analysis etc. are also under this title (special sub-head) and so is Hay Fever; Chemistry of Pollens.

Then one comes to Resuscitation, covering both respiratory and cardiac-failure. Mouth to mouth artificial respiration is described and illustrated and so is cardiac massage through open chest. Closed chest massage was developed too recently to get into the essay. "The simpler procedures of stimulating the myocardium by pounding on the chest . . . can be tried . . . as long as not too much time is consumed." Defibrillation by electric shock and by potassium and calcium salts (also procaine) is described and the artificial pacemaker is mentioned.

Radiation has many subheadings, including gamma spectrometry; protection and health physics, including waste disposal, radiation therapy and biologic effects, radiation sickness and even aging. Chemical effects is one of the many subheadings under Roentgen Rays. For X-ray generators one is referred to Vol. II, but Trump has two pages for the Van de Graaf. Subheading Tubes, advances in design are briefly told for rotating anode, beryllium window, betatron and linear accelerator. This is followed by three pages on low inherent filtration and then four pages on rotating anode.

Under Sensory Devices is a remarkable essay on the frequency spectrum of electrocardiogram and electroencephalogram obtained by speeding up a tape recording and putting the multiplied frequencies through a sound spectrograph.

Space Medicine gets a concentrated treatment in five pages not omitting algae to produce food and regenerate O_2. Ultrasonics and its use for producing lesions in the central nervous system are treated extensively, yet the two essays are preceded by one on vibratory energy in human tissue under Tissues: body.

The general discussion under Biology: Application of Control System Theory gets seven pages, while under Vision: Servo analysis of Pupil Reflex to Light is an archive article of sixteen pages (very interesting).

Such overlaps and jumpy organization are inevitable, of course, in a book written by many authors. An intelligent use of the index and classified table of contents will easily overcome this fault.

Every time I open the book to look something up, my eye lights on something I didn't know—example: Counter current heat exchange to keep testicle cool. Bioelectric potentials produced by growing tissues. Effects of magnetic fields on growth. These appear to be real, not quackery. The once notorious Gurwitz rays are not in the index, although they are discussed in Vol. I under Mitrogenic Radiation.

I note half a column under Anesthesia: Xenon, in addition to its mention under Narcotic Action of Air, but its obliteration of the effect of anoxia on biologic effect of radiation is not mentioned.

As in Volumes I and II, there is lots of help in this book for the investigator momentarily out of his field, and lots of intellectual entertainment for the dilettante.

R. R. Newell, M.D.

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DRUGS OF CHOICE—1962-1963—Walter Modell, M.D., Editor; Director, Clinical Pharmacology, and Associate Professor of Pharmacology, Cornell University Medical College, New York, N. Y.; Attending Physician, Veterans Administration Hospital, Montrose, N. Y. The C. V. Mosby Company, St. Louis, Mo., 1962. 941 pages, $14.50.

This book is edited by the editor of *Clinical Pharmacology and Therapeutics* who had excellent training in basic pharmacology under Prof. McKeen Cattell at Cornell University Medical Center and who has devoted his more recent years to clinical pharmacology, internal medicine and medical writing. Each chapter is written by a specialist, skilled not only in clinical practice but also in clinical or laboratory research. For example, Chapter 6 on "Drugs for Nutritional Disorders" by William B. Bean, Professor of Medicine, University of Iowa; Chapter 7 on "Local Antiseptics" by Philip B. Price, Dean and Professor of Surgery at the University of Utah College of Medicine; Chapter 8 on "Antibacterial Agents" by Chester S. Keefer, Professor of Medicine, Boston University; Chapter 11 on "Stimulants to Vital Medullary Centers" by McKeen Cattell, Professor (Emeritus) of Pharmacology, Cornell University Medical College; Chapter 14 on "Sedatives and Tranquilizers in General Medical Practice"' by Dale G. Friend, Clinical Pharmacologist at Peter Bent Brigham Hospital, Boston; Chapter 15 on "Hypnotics" by Louis Lasagna, Associate Professor of Medicine and Pharmacology, Johns Hopkins University School of Medicine; Chapter 24 on "Drugs in the Treatment of Hypertension" by Sidney W. Hoobler, Professor of Internal Medicine and Director of the Hypertension Unit, University of Michigan Medical School; Chapter 26 on "Vasodilator Drugs for the Treatment of Peripheral Vascular Disturbances" by John H. Moyer, Professor of Medicine at Hahnemann Medical College; and Chapter 39 on "Dermatologic Drugs" by Marion B. Sulzberger, Professor Emeritus of Dermatology, New York University School of Medicine.

A special feature of this practical treatise on drugs is a series of 46 tables for quick reference on such subjects as "Determination of Children's Doses from Adult Doses on the Basis of Body Surface Area," "Normal Electrolyte Patterns of the Body Fluids," "Conversion of Gravimetric Concentrations of Plasma Electrolytes to Combining Equivalents," "Clinical, Chemical and Biological Data on Vitamins," "Diseases in which Penicillin Is the Antibacterial Agent of Choice," "List of Allergic or Possibly Allergic Reactions to Drugs," "Average Doses of Vasopressor Drugs," "Nonnarcotic Antitussive Agents," "Corticotropin and Cortico-steroids Employed in Allergic Disease," "Summary of Therapy of Hypoplastic Anemia or Bone Marrow Failure," "Suggested Constituents of a Kit for Treatment of Poisoning," etc.

This book is as up to date as a book can be, and although the previous edition was published in 1960, it offers much that is new, either in substance or point of view. There are four chapters by new authors: "Antidiabetic Agents," "Drugs in Arterial Hypertension and Shock," "Anticonvulsants," and "Antiemetic Agents."

With each new edition of this book, there is improvement in the selection of material, manner of presentation and interest to the reader.

Clinton H. Thienes, M.D.

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SYNOPSIS OF OBSTETRICS—Sixth Edition—Charles E. McLennan, M.D., Professor of Obstetrics and Gynecology, Stanford University School of Medicine, Palo Alto, Calif. The C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Mo., 1962. 464 pages, $6.75.

This well-known, attractively produced and apparently popular précis is written in a succinct, almost telegraphic style, in which the text is partly in tabulated form. Despite extreme condensation, virtually all important subjects in obstetrics are touched to some extent. The emphasis of this book is on diagnosis and management of obstetrical problems, and all of the clinical methods described represent relatively sound and conservative practice. However, as is perhaps inevitable in such a manual of this sort, the author is rather dogmatic in his recommendations.

In this edition there is a certain improvement in the organization of the text with rearrangement of the material into a more logical sequence. The mechanism of labor is now placed before the management of labor, and postpartum hemorrhage is now treated with the postpartum complications, rather than with antepartum hemorrhage. We are happy to see that in the management of postpartum hemorrhage the recommendation for packing of the uterus has been withdrawn from the text; and that the number of sex chromatins in the human is now correctly stated to be 46.

Despite these changes, however, the question naturally arises as to whether this new edition is truly justified. True, this edition is organized into six fewer chapters, has 12 new illustrations and 61 more pages as compared with the edition of five years previously; however, it offers precious little new information.

One defect is that certain statements which seem incontrovertible, are in fact extremely debatable; for example, that the best treatment of hyperthyroidism in pregnancy is preparation with Lugol's solution followed by subtotal thyroidectomy; and that in malarious areas, malaria is not usually a serious complication of pregnancy. It would seem that in a discussion of the treatment of genital urinary tract infections the dangers to the fetus of certain sulpha drugs should be emphasized, and that, in a section on hemorrhagic disease of the newborn the amount of vitamin K to be given for prophylaxis should be clarified and the dangers of over-dosage emphasized. In the section on Apnea neonatorum there is no real discussion of treatment, which is, however, presented over 200 pages previously in the section on care of the newborn. One would also think that a small bibliography would be useful in referring the reader to a fuller treatment of reference material elsewhere.

Another question which naturally arises is for whom this synopsis is intended. The preface would indicate that it is mainly to be of value to students, and ostensibly this book is probably presented as a foundation on which they are to build clinical experience. One must question the validity of commending this expensive volume as a mere outline of obstetrics, to be used by itself by medical students, however, since it would seem desirable for them to have a fuller treatment of the material with a more discursive presentation and less rigid dogmatism. In addition for slightly more than twice the price of this book one could obtain the classic textbook of obstetrics in the English language. Furthermore, certainly practitioners of obstetrics could not expect to use this as their source of knowledge. Thus although this volume is attractively prepared and beautifully bound, it would seem there is debatable justification for its publication. Finally, in view of the paucity of editorial change, we are sorry to see that the name of Dr. Litzenberg, the synopses' original author, is omitted from this edition.

Lawrence D. Longo, M.D.

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TREATMENT OF INJURIES TO ATHLETES—Don H. O'Donoghue, M.D., Professor of Orthopedic Surgery, University of Oklahoma Medical School, Oklahoma City. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1962. 649 pages, $18.50.

Although the injuries which athletes suffer during rituals of sport are not peculiar to them, a book specializing in their care is useful as the approach differs from the general run of traumatology. As Dr. O'Donoghue points out, treatment of athletic injuries must aim for a completely perfect result so that the athlete can again take his place in competition. Such perfection is of lesser importance to the average working man where other socio-economic factors must also be considered. Further, in contradistinction to industrial medicine where the physician must guard himself against a human tendency on the part of the patient to prolong his illness, in the care of the athlete the physician must resist the patient's enthusiasm and be sure he is really fit for full duty.

The management of the injuries described starts on the playing field in most cases and ends with the return of the athlete to sports participation. The mechanism of the injuries is clearly described, pertinent physical findings are emphasized, and proper procedures clearly outlined; also the "Do Nots" are driven home. In drawing on his obviously vast fund of personal experience Dr. O'Donoghue has given us a readily understandable picture of the problems encountered in this area. Numerous excellent photographs and diagrams illustrate points in the text. The book is satisfactorily dogmatic in that it lays out at least one firm method of treatment for each of the injuries described. Such a presentation gives the reader something to "hang his hat on" and leaves room for challenging discussion on other possible methods of treatment. For example, this reviewer would be interested to know how many physicians are now treating fractures of the midshaft of the clavicle with open reduction, as recommended by Dr. O'Donoghue.

This volume will be of particular value to those wholly engaged in treating athletic injuries; however, any practicing physician or orthopedic surgeon would do well to have it in his library.

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LOW BACK PAIN SYNDROME—Rene Cailliet, M.D., Chief of Department of Physical Medicine, Southern California Permanente Medical Group; Associate Clinical Professor, University of Southern California School of Medicine Department of Physical Medicine and Rehabilitation. F. A. Davis Company, Philadelphia, 1962. 120 pages, paper-bound, $3.00.

The book discusses the anatomy of the spine, abnormal deviation of spinal function as a pain factor, the clinical application of low back mechanics, the diagnosis and treatment of pain syndromes, the author's concept of correction of faulty body mechanics and therapeutic approach to low back pain and the role of disc disease and other miscellaneous low back conditions, which cause low back discomfort.

The book is replete with illustrations and "match-stick" drawings, which demonstrate the author's concept of the cause of low back pain. Corrective exercises are also well illustrated.

The book would be of particular interest to physicians who are faced with the problem of caring for patients with low back pain, particularly those physicians interested in nonoperative treatment. The subject is presented concisely and dogmatically and some suggestions of the author would, therefore, provoke controversy.

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THE GYNECOLOGIC PATIENT—A Psycho-Endocrine Study—Somers H. Sturgis, with Doris Menzer-Benaron, in collaboration with Thomas A. Morris, Joseph Sabbath, Phillip Gates, Alfred O. Ludwig, Richard Wilson, Robert Eisendrath, Benjamin Murawski and Harriet Robey. With the editorial and secretarial assistance of Riva Shipner. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 243 pages, $7.75.

Beginning a decade ago, selected patients admitted with gynecologic complaints to the surgical clinics and wards at the Peter Bent Brigham Hospital in Boston were studied intensively from a psycho-endocrine viewpoint by the staff of a joint gynecologic-psychiatric research unit. This monograph is a report on the findings of this research effort over a period of more than six years; presented largely through abstracts of case reports and summarizing comments on each case. The first section of the book describes functional gynecologic problems presumed to be psychological in origin, and these are chiefly instances of amenorrhea, dysmenorrhea, premenstrual tension, plus a few miscellaneous problems such as small breasts, the frigid personality, and postpartum psychosis. The second major section deals with organic problems that require a consideration of the emotions of the patient if the indicated physical procedures are to be well tolerated. Here there are reports of patients with congenital anomalies, benign lesions of the uterus, and infertility.

The senior gynecologist on the research team has been responsible for organizing the vast material of the study and selecting the representative samples used for their teaching value. He has done an admirable job of bolstering the notion that gynecology embraces the total care of a woman with complaints referable to her reproductive organs. At the end of the book there is a short general summary, with conclusions, followed by an epilogue in which the author makes suggestions for improving the gynecologic health of our country's women. He believes that young physicians in training, and especially surgical residents, must be thoroughly indocrinated in the guiding principles of the endocrine and psychiatric factors that are pre-eminent in gynecologic practice.

This small volume will be of interest to all physicians who wish to learn more about why women act as they do. It should be required reading for all physicians who believe that most anyone with surgical skill can treat gynecologic lesions successfully, but it is unlikely, of course, to come to the attention of many who fall in this category. Too often this has been the fate of worthy efforts in graduate medical education—maldistribution of the basic materials.

C. E. McLennan, M.D.

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GYNECOLOGY AND OBSTETRICS — John William Huffman, M.D., Professor of Obstetrics and Gynecology, Northwestern University Medical School; Attending Gynecologist and Obstetrician, Passavant Memorial Hospital; Attending Gynecologist and Head of Department of Gynecology, Children's Memorial Hospital. W. B. Saunders Company, Philadelphia, 1962. 1190 pages, $28.00.

This large, weighty volume is the latest effort to merge and integrate the teaching of obstetrics and gynecology by placing the usual didactic material between a single pair of covers. While this is not a novel idea, as the author points out, the size of the book and the arrangement of the material within it make it unique. An effort has been made to describe all the important features of the female genitalia in both health and disease from earliest embryonic life all the way to senescence. Considerable space is devoted at the outset to the embryonic development of the genitalia, and then clinical examples of developmental abnormalities are described, but these, for some reason, appear well ahead of two extensive and excellent chapters on normal gross and histologic anatomy. The intervening sections cover pediatric and adolescent gynecology. Considerations of menstrual and coital problems, as well as infertility, complete approximately the first 300 pages of material.

A middle section of about 500 pages is devoted to twenty-one chapters telling a fairly standard story of normal and abnormal obstetrics, but with minimal emphasis on therapy and with something less than the usual volume of illustrations. The remaining 400 pages present what might be termed the real meat of gynecology. Here we find the traumatic lesions, inflammatory diseases, benign and malignant tumors, the menopause, and finally a short chapter on geriatrics as viewed by the gynecologist.

This book was designed, the author says, as a student text to provide summations of current concepts, but it was his intent to avoid expositions of purely mechanical principles and surgical techniques. While the writing is lucid and soundly based, and the illustrations in the main excellent, the massiveness of the volume may overwhelm the average undergraduate who likes his summation in smaller doses and with more pictures than one finds in many sections of this work. Certainly some of the chapters, particularly those on embryology and anatomy, can be recommended for graduate (residency) teaching, but much of the clinical material is too synoptic to be attractive to the advanced student. And the busy practitioner, of course, is likely to be searching more for therapeutic aids than for explanations of the natural history of woman.

Clearly the author has completed a stupendous task for a single contributor and has turned out a very handsome product. Whether it will really fill the niche for which it was designed is a question only time can answer. Dollarwise the student probably can get more information for his money buying separate obstetric and gynecologic texts, particularly if he has some interest in retaining them for reference beyond the day of graduation.

C. E. McLennan, M.D.

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PSYCHOLOGICAL DEVELOPMENT IN HEALTH AND DISEASE—George L. Engel, M.D., Professor of Psychiatry and Associate Professor of Medicine, The University of Rochester School of Medicine and Dentistry. W. B. Saunders Company, Philadelphia, Pa., 1962. 435 pages, $7.50.

The appearance of this book fulfills a long-felt need in the field of psychiatric medicine in that it attempts to unify and present in a concise and eminently literate and terse way the psychological bases of behavior and to integrate this with the psychological and conceptual disturbances which illness produces. It embraces not only psychiatric diseases and psychosomatic reactions to stress, but discusses in a more complete way than is usual the effects on the patient of such major stresses as grief and mourning, danger and disaster.

This is a large order for a not so large volume. It is not surprising that it is, therefore, less complete than one could wish and that the description of the varied reactions to internal and external stress is more simplistic than is generally found to be the case.

All in all, this book, while presenting nothing that is new, merits purchase by its comprehensiveness, its lucid writing and scope.

Charles W. Wahl, M.D.

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DISSEMINATION OF CANCER—PREVENTION AND THERAPY—Warren H. Cole, M.D., F.A.C.S., Professor and Head of the Department of Surgery, University of Illinois College of Medicine; Surgeon-in-Chief, Illinois Research and Educational Hospitals, Chicago; Gerald O. McDonald, M.S., M.D., F.A.C.S., Associate Professor of Surgery, University of Illinois College of Medicine; Attending Surgeon, West Side Veteran's Administration Hospital, Chicago; Stuart S. Roberts, M.S., M.D., Instructor in Surgery, University of Illinois College of Medicine; Clinical Fellow, American Cancer Society; and Harry W. Southwick, M.D., F.A.C.S., Clinical Associate Professor of Surgery, University of Illinois College of Medicine; Associate Attending Surgeon and Director of the Tumor Clinic, Presbyterian-St. Luke's Hospital, Chicago. Appleton-Century-Crofts, Inc., 34 West 33rd St., New York 1, N. Y., 1961. 462 pages, $12.75.

The accumulation of the facts and theories of the causes and cure of cancer is so vast that no individual or group can completely assimilate it. Dr. Warren H. Cole and his associates have long studied the growth and dissemination of cancer cells, in the laboratory and in patients. In this volume they give their recommendations as to how such dissemination can be prevented and treated.

This monograph is an account of the dynamic growth and spread of cancer, starting with motile, invasive cells and tracing their routes of passage to the establishment of metastases.

The four pathways of spread (1) local invasion, (2) lymphatics, (3) implantation, and (4) vascular channels are discussed with particular emphasis on spread by implantation and vascular channels. Factors favoring the spread of cancer, and local and systemic conditions which limit or destroy the growth are described in detail. Each chapter provides an extensive list of references.

Experimental evidence is presented indicating that various forms of stress, including operations, reduce the resistance of the host to the cancer and suggest that it is a factor in the human.

The possible relationship of viruses in the etiology of cancer is discussed. The effects of various hormones, particularly the sex hormones, are described.

The chapter on factors in the immunology of cancer is less conclusive, but the authors indicate that there is a possibility of developing a cancer antiserum or vaccine.

Experimental and clinical experience with various chemotherapeutic agents is described and methods such as regional perfusion are discussed.

The chapter on preventive measures in treatment is particularly valuable for the general surgeon. The importance of earlier diagnosis is vigorously defended. The physician is warned of the many ways that he or others may spread the cancer by rough examinations, taking biopsies or seeding cancer cells in the operative wound.

This monograph is extremely well done. It traces the often complex routes of dissemination of cancer and describes the factors that cause, prevent or limit such spread. It presents a skillful blend of experimental laboratory and clinical studies. It describes ways and means of preventing and treating cancer dissemination. This is a helpful and hopeful volume for anyone interested in the treatment of cancer.

Leonard Dobson, M.D.

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UROLOGY IN MEDICAL PRACTICE—Second Edition—Frank C. Hamm, M.D., M.S., F.A.C.S., Professor of Urology, Department of Surgery, State University of New York, Downstate Medical Center; Director of Urology, Kings County Hospital; Chief Attending Urologist, The Brooklyn Hospital; Consulting Urologist, Brooklyn Veterans' Hospital, Maimonides, Lutheran and St. Mary's Hospitals; and Sidney R. Weinberg, M.D., F.A.C.S., Associate Professor of Urology, Department of Surgery, State University of New York, Downstate Medical Center; Attending Urologist, Kings County Hospital; Consulting Urologist, Brooklyn Veterans' Hospital; Associate Attending Urologist, Long Island College Hospital; Assistant Attending Urologist, Maimonides Hospital. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1962. 323 pages, $9.75.

This is the second edition of a work which first appeared in 1958 under the title "Urology in General Practice." It is one of the rather large group of similar volumes presented in recent years, designed originally for the use of medical students and later expanded into a compendium for general practitioners. It is, of course, assumed that like the students they are more interested in a concise outline of the subject than in an exhaustive comprehensive study. For the former purpose the book is ideal, for the authors are thoroughly competent and are well known in the field of Urology.

Careful examination of the book reveals that none of the common lesions and few of the extremely rare ones fail to receive attention. However, as might be expected, only a few of the subjects receive detailed discussion, and many of them are hardly more than mentioned. In many cases the main value of the book will lie in suggesting the possible existence of some condition that merits further study. Probably this is proper in a book of this kind and fortunately an adequate bibliography is included.

The format of the book is excellent. The pages are large, double column, and the printing is in good type-face on an excellent quality of paper, on which the illustrations and X-ray reproductions are well done. The book is generously illustrated and these, with few exceptions, are of great value in demonstrating the pathological conditions under consideration.

In common with most of the books of this type treatment as a rule receives for the most part rather sketchy attention. Obviously lack of space precludes adequate discussion of the factors involved in proper selection of treatment in complicated cases. The authors are to be complimented on their conservative attitude toward the more radical procedures of recent years advocated for the relief of advanced disease. Thus they do not lead the reader to become a proponent of a questionable procedure, with potentialities for harm as well as good, the decision for which should never be made except by someone adequately trained and experienced in urology.

In summary, this book by Drs. Hamm and Weinberg is an unusually good outline of the subject for the student or general practitioner, adequate as an index of the subject and a general outline, and excellent as a point of departure for further study. In addition, its clear and concise text and its adequate illustrations may often be used by the physician in explaining to the patient his personal problem. This is a bonus factor which may determine the selection of this work in preference to one of the others of the same type presently available.

LYLE G. CRAIG, M.D.

* * *

MANAGEMENT OF EMOTIONAL DISORDERS—A Manual for Physicians—A. H. Chapman, M.D., Assistant Clinical Professor of Psychiatry, University of Kansas School of Medicine; Attending Psychiatrist, St. Mary's Hospital, Menorah Medical Center, and Research Hospital, Kansas City, Mo. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1962. 259 pages, $8.50.

Doctor Chapman has attempted to deal with a vast number of psychiatric problems in relatively few pages and has also included advice about the rearing of children, the business of getting and staying married, and how to cope with grief at death. Other chapters have to do with psychosomatic problems, the handling of depression and excessive compulsive states and the like. Perhaps the most interesting chapter deals with acute and chronic anxiety.

The book is written in an interesting way, there is avoidance of the more sophisticated aspects of psychiatric terminology and as an introductory primer to all these subjects, it is recommended. However, the volume should be thought of as a stimulant to further reading.

FRANK F. TALLMAN, M.D.

* * *

SYSTEM OF OPHTHALMOLOGY—Vol. VII—The Foundations of Ophthalmology (Heredity, Pathology, Diagnosis and Therapeutics)—edited by Sir Stewart Duke-Elder. The C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Mo., 1962. 829 pages, with 471 illustrations and 11 coloured plates, $30.00.

This volume brings up to date a previous volume and covers heredity, pathology, diagnosis and therapeutics. The first five chapters are a thorough coverage of heredity according to our present day concepts. The next seven chapters cover general pathology. The metabolic, connective tissue, degenerative, growth, circulatory and inflammatory diseases are carefully explored. The next three chapters discuss the modern methods of clinical examination. The newer experimental methods are explained and evaluated. The older generally accepted procedures are reviewed and explained.

Section four begins with ocular therapy of the ancients and ends with the newest techniques. A comprehensive review of present day drugs and their pharmacological actions are carefully presented.

The final chapter concerning physical therapy is especially interesting.

This book, like all the previous volumes, is especially well written, authentic and easily read. This book is an excellent source of information for the young clinician and a worth while post graduate review for the older clinician.

ALFRED R. ROBBINS, M.D.

* * *

BRAY'S CLINICAL LABORATORY METHODS—Sixth Edition—Revised by John D. Bauer, M.D., Director of Laboratories, DePaul Hospital, St. Louis, Mo.; Director of Laboratories, Faith Hospital, St. Louis, Mo.; Consultant Pathologist, Lutheran Hospital, St. Louis, Mo.; Assistant Professor, Washington University School of Medicine (Pathology), St. Louis, Mo.; Gelson Toro, Ph.D., Assistant Director of Scientific Research, Gerontological Research Foundation, St. Louis, Mo.; Consultant in Biochemistry and Clinical Chemistry, St. Louis Chronic Hospital and Missouri Clinical and Biochemical Laboratory, St. Louis, Mo.; and Philip G. Ackermann, Ph.D., Research Assistant Professor, Division of Gerontology, Washington University School of Medicine, St. Louis, Mo.; Biochemist, St. Louis Chronic Hospital, St. Louis, Mo. The C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Mo., 1962. 594 pages, $10.50.

The Sixth Edition of Bray's Clinical Laboratory Methods is an expanded form of this excellent ready-reference text on laboratory methodology. The authors have increased the coverage on many procedures not known when the previous edition appeared in 1957. The section on hematology is particularly good, especially the discussion on hemorrhagic diseases due to coagulation defects in association with blood factors. The chapter on urinalysis has been enlarged to include paper chromatography of amino acids, paper electrophoresis of urinary proteins and tests for urinary steroids, catecholamines and enzymes. The chapter on microbiology has been entirely rewritten with emphasis on modern methods. References have been brought up to date in this sixth edition. In rewriting this book it is evident that the authors kept a strict vigil in that the thoroughness and reliability of previous editions were never jeopardized. I recommend this edition to all readers interested in the subject.

PAUL MICHAEL, M.D.

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THE THYROID—Second Edition—A Fundamental and Clinical Text, with Sixty-five Contributors—Sidney C. Werner, M.D., Sc.D. (Med.), Editor. A Hoeber Medical Book, Harper & Row, Publishers, 49 East 33rd Street, New York 16, N. Y., 1962. 873 pages, $24.00.

The shield-shaped gland that sits astride the windpipe and acts as a "choke" to the body's metabolism has been a focus of speculation and investigation since Wharton (of the double-crossed Duct) named it the thyroid in 1656 and suggested it was there to round out and beautify the neck "particularly in females to whom for this reason a larger gland has been assigned." But it was not until the last years of the last century and the early years of this one that the role of the thyroid in Graves' Disease and myxedema was partly clarified, and the relationship of iodine to goiter and thyroid function, and finally the isolation of thyroxin from the gland.

Since the first edition of this comprehensive text in 1955, many advances have been made in explaining thyroid diseases. The genetics and biochemistry of several different types of goitrous cretinism have been worked out. Struma lymphomatosa (Hashimoto's Disease) has been added to the list of autoimmune conditions. The "thyroid activator" of Graves' Disease (diffuse toxic goiter with exophthalmos) has been shown to differ from normal pituitary thyrotropin, and recent evidence makes it appear unlikely that the pituitary is the "cause" of this type of hyperthyroidism. All these current topics, as well as the more established aspects of thyroid physiology and pathology are discussed by outstanding experts, and these discussions are bound together by running comments from the editor, Sidney Werner, who has for years been one of the leading investigators in many of these areas.

This is a superb job of editing, bringing together the old and the new, the historical and that which is just emerging in current investigational journals. Unfortunately, or happily, depending on whether Dr. Werner looks at the matter from the viewpoint of an editor or a seeker after understanding, work on the thyroid is progressing so rapidly that an extensively revised third edition will doubtless be called for within a very few years. We hope that this new edition will contain solutions to these present mysteries: the fundamental action of thyroid hormones: the cause of Graves' Disease; the causes of non-toxic nodular goiter; the reasons, aside from beauty. why women have far more thyroid disease than men.

JEROLD M. LOWENSTEIN, M.D.

* * *

WATER, ELECTROLYTE, AND ACID-BASE BALANCE—Normal and Pathological Physiology as a Basis for Therapy—Second Edition—Harry F. Weisberg, M.D., Clinical Associate Professor of Medicine, The Chicago Medical School; Chemical Pathologist and Associate Attending Physician, Little Company of Mary Hospital; Co-Head, Metabolic and Endocrine Clinic and Associate Attending Physician, Mount Sinai Hospital; Consulting Physician, Central Community and Franklin Boulevard Hospitals, Chicago, Illinois. The Williams & Wilkins Company, Baltimore 2, Maryland, 1962. 533 pages, $13.00.

Dr. Weisberg in his second edition has provided a valuable source of information on water, electrolyte, and acid-base balance to both the student and the clinician. An initial chapter devoted to terminology is particularly likely to be helpful to the novice in this field. Tables and nomograms make a large amount of information rapidly available. Graphic explanations are effectively used as teaching devices. An extensive, well cross-indexed bibliography will appeal to the investigator.

The modern student of medicine needs information of the type so well provided in this book which is therefore recommended for your library.

* * *

RECENT DATA ON THE PHARMACOLOGY AND CLINICAL ASPECTS OF PHENOTHIAZINE DERIVATIVES—Translations, Vol. I—Moscow—1958. Published for The National Science Foundation, Washington, D. C., and The Department of Health, Education and Welfare, U.S.A., by The Israel Program for Scientific Translations, 1961. Translated by: B. Dubinski, Dr. Z. Lothane, M. Roublev, edited by V. V. Zakusov, Member Ac. Med. Sc. U.S.S.R. (These studies were performed in the Institute of Pharmacology and Chemotherapy of the U.S.S.R. Academy of Medical Sciences) 186 pages, $2.00. Available from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.

This paper-bound book is a collection of 14 reports of laboratory investigations and two clinical studies of a series of phenothiazine and chlorphenothiazine derivatives. A preface by the editor summarizes the actions of the chemical series and designates them as neuroplegic substances, since they "possess the capacity to inhibit selectively many functions of the nervous system" and "in distinction to narcotics . . . do not exert a depressing action upon the nervous system as a whole. Thus they do not exclude consciousness completely." He also points out that aside from the ataractic effect, there is reduction of muscular tonus and muscle spasm, and the drugs are antiemetic, they lower body temperature, potentiate narcotic somnifacient and analgesic drugs and are adrenolytic, anticholinergic and antihistaminic.

Whereas the reports included in the book demonstrate all these effects on animals, the effects reported in the two clinical papers described only the ataractic effect and dryness of the mouth which was a manifestation of an anticholinergic action.

Although the pharmacologic papers are interesting, they duplicate much of the work already reported in French, English and American literature: and several, reporting average effects, fail to state the number of animals used. Clinical studies, one on surgical patients and one on psychotic patients, were limited to chlorpromazine and to mepazine.

CLINTON H. THIENES, M.D.

* * *

PEDIATRIC SURGERY—Volumes I & II—Edited by Clifford D. Benson, B.S., M.D., F.A.C.S., Clinical Associate Professor of Surgery, Wayne State University Medical School; Surgeon-in-Chief, Children's Hospital of Michigan; Surgeon, Harper Hospital; William T. Mustard, M.D., F.R.C.S.(C), F.A.C.S., Assistant Professor of Surgery, University of Toronto; Chief of Cardiovascular Surgery, Hospital for Sick Children, Toronto; Mark M. Ravitch, B.A., M.D., F.A.C.S., Associate Professor of Surgery, Johns Hopkins University School of Medicine; William H. Snyder, Jr., M.D., F.A.C.S., Clinical Professor of Surgery, University of Southern California School of Medicine; and Kenneth J. Welch, M.D., F.A.C.S., Instructor in Surgery, Harvard Medical School. Year Book Medical Publishers, Inc., 35 East Wacker Drive, Chicago 1, Ill., 1962. 1291 pages in Vol. I & Vol. II, and 59 pages of Index, $42.00.

This is a new and definitive work on pediatric surgery by 79 international surgical authorities. It is admirably illustrated, a few of the illustrations being in full color. The cost of the two volumes is $42.00, and it aims to be a comprehensive review of all aspects of pediatric surgery. It is a book designed to provide more than an adequate amount of information for the general physician and surgeon interested in pediatric surgery, and it is planned to be a reference work for surgeons interested primarily in pediatric surgery. The editors and contributors were dedicated to making of these two volumes the most outstanding books available today on pediatric surgery.

There is no doubt that this is an excellent two-volume set on pediatric surgery. It certainly is a work that should be in the libraries of every hospital and every medical school in the country. Its exact place in the library of the practicing physician and surgeon is, however, open to question.

There are three other American works on pediatric surgery which are worthy of mention and evaluation with respect to the present comprehensive work. The simplest and smallest book on pediatric surgery is that of Willis J. Potts. This small volume of some 150 to 200 pages gives a very personal view of the author's extensive experience on pediatric surgery. For the average physician it is more than adequate, and it is certainly far simpler and much less expensive than the present two-volume set on pediatric surgery. Of the other two excellent books on pediatric surgery, one is written by Orvar Swenson, and the other by Robert Gross. Both of the latter two books are excellent, but probably the one by Robert Gross is, at the present time, the classic in its field. It is, unfortunately, badly outdated in several sections, and there is certainly need for definitive new work on pediatric surgery. However, the books by Dr. Swenson and Dr. Gross cover admirably the entire field of pediatric surgery, are much more personal in their approach, and give the average physician all the information that is needed in a more concise yet well illustrated fashion. I have kept the present two-volume set on my desk, and have referred to it with respect to every problem in pediatric surgery that I have encountered either personally or in my hospital experience during the past two months. I have found the two-volume set on pediatric surgery excellent, but have several minor criticisms concerning it. In the areas of the common problems, the coverage in the new pediatric surgery is generally excessive, yet not more helpful than the coverage of similar material in the books of Swenson and Gross. The coverage in the areas of specialties, such as neuro-surgery, orthopedics, plastic and cardiovascular surgery, is generally quite good, but still would not permit the average surgeon to undertake surgical care in these areas, nor would it be a reference source for those engaged in these specialty fields. The problem of presentation, admittedly, is a complex one, for pediatric surgery overlaps so extensively into the specialties of orthopedics, neurosurgery, cardiovascular surgery and plastic surgery that it is hard for any one surgeon to be competent in all of these areas. The specialty texts in these special disciplines contain more information for the specialist than does this book on pediatric surgery. The advances in the specialties are covered better than in the existing books on pediatric surgery, but the present two volumes can hardly serve as a reference set for the specialty areas. Each specialty is advancing with sufficient speed that the book gives only the basic knowledge in the specialty areas and cannot serve as a definitive work in the specialty areas.

These criticisms are minor ones, and inherent, of course, in the nature of this work, which fuses the concepts and interests of 79 different authorities. It makes, however, of the books the type of book which is best suited for hospital or library use rather than one which should be kept handy and available on the desk of the practicing surgeon. Everyone interested in pediatric surgery should be familiar with these two volumes, should have access to them in his library or hospital environment, but in the majority of everyday problems will find the smaller texts simpler and equally serviceable for daily use. Reliance will still have to be placed on definitive articles in the general surgical literature, rather than on these two volumes for specialty problems, particularly in fields of cardiovascular, plastic, orthopedic and neurosurgery.

The subject matter covered is quite comprehensive, and the size of the works permits detailed consideration of physiological, embryological, anatomical and pathological considerations, as well as attention to diagnosis and surgical therapy. No better coverage of pediatric surgery can be found in the American literature today. The editors and publishers are to be congratulated on the excellence of this work, even though it is the kind of work that need not be in the personal library of each practicing surgeon and physician.

Victor Richards, M.D.

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THE HEMORRHAGIC DISORDERS—A Clinical and Therapeutic Approach—Second Edition, Revised and Enlarged—Mario Stefanini, M.D., Associate Professor of Medicine, Tufts University School of Medicine, Boston, Mass.; Clinical Pathologist and Associate in Medicine (Hematology), Willys Clinic; Attending Physician (Hematology), Mercy Hospital and Maumee Valley Hospital, and Attending Staff, Toledo Hospital, Toledo, Ohio; and William Dameshek, M.D., Professor of Medicine, Tufts University School of Medicine, and Senior Physician and Director, Blood Research Laboratory, New England Center Hospital, Boston, Mass. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 614 pages, $21.50.

This new edition is completely revised and enlarged in line with the rapid changes in knowledge in this complex field. It presents the authors' views on the factors involved in normal hemostasis, and then proceeds to a discussion of vascular defects, thrombocytopenia and qualitative platelet defects, coagulation factor deficiencies, circulating anticoagulants, and hemorrhagic diseases of complex etiology. The authors draw heavily on their own extensive experience in this field. A large number of graphs and photographs illustrate findings in their cases.

The authors have chosen to present a wealth of detail about all the topics under discussion rather than limit themselves to well-established and basic facts. In so doing, they have included references to many reports whose findings await confirmation, some of them having appeared only in abstract form. As a result, the book contains very many statements which could not be accepted by other experts in the field; and it will undoubtedly be difficult reading for anyone without a strong foundation of knowledge in this area of medicine.

On the other hand, this book provides more detailed coverage of the clinical aspects of the hemorrhagic states than any other similar text, and it therefore provides a source of information not easily available elsewhere. There are over 1555 references. Extensive use of tables provides excellent summaries of many facets of the problems discussed. The book will be a useful addition to medical libraries, but it should not read uncritically.

Herbert A. Perkins, M.D.

* * *

SYNOPSIS OF GENITOURINARY DISEASE—Seventh Edition—Austin I. Dodson, Jr., M.D., Associate Clinical Professor of Urology, Medical College of Virginia, Richmond; and J. Edward Hill, M.D., Assistant Clinical Professor of Urology, Medical College of Virginia, Richmond. The C. V. Mosby Company, St. Louis, 1962. 384 pages, 123 illustrations.

First published in 1934, this book has been revised and brought up to date. It has always been a good reference book for general practice and for medical students. It is small, easy to handle, well written and inexpensive. There are chapters on the signs and symptoms of urinary disease, the urological instruments that might be needed in general practice and the anatomy of the genitourinary organs. Other chapters briefly cover the commonly encountered urologic diseases.

* * *

HAEMATOLOGY AND BLOOD GROUPS—Papers from the British Medical Bulletin—Edited by D. A. G. Galton and K. L. G. Goldsmith. The University of Chicago Press, 5750 Ellis Avenue, Chicago 37, Illinois, 1961. 169 pages, $4.00.

The material contained in this book consists of a reprint of a series of articles originally appearing in the British Medical Bulletin 15: (Numbers 1 and 2) 1959. These are brief but authoritative résumés of research and clinical concepts in the field of hematology, blood chemistry and immunology, and blood groups and are authoritatively current to the publication date. They are not presented in great detail, nor do they contain material not generally available in the literature elsewhere. They include summarizations concerning certain aspects of iron, B_{12}, and folic acid metabolism, the biosynthesis and chemistry of hemoglobins, the technique of marrow culture, the metabolic, technological and clinical features of the hemolytic anemias, and treatment and epidemiology of human leukemias. Also summarizations are given of current knowledge of blood groups in man and animals together with discussion of genetic and anthropologic data on human blood groups. The thirty contributors are leaders in their field. The chief attribute of the book is the bringing together in one place of certain authoritative though brief discussions of these selected, special topics.

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Medical Facilities Needed At Large Airports

Comprehensive medical programs for large airports were recommended recently to "save lives and reduce suffering."

Dr. Homer L. Reighard, Boston, said the Federal Aviation Agency "knows of instances in which major aircraft accidents might have been averted, or fatality and disability reduced, by the existence of adequate medical support and surveillance."

The value of medical programs in improving the performance and effectiveness of employees in industry is well known and has been extensively demonstrated, he said in the October *Archives of Environmental Health*, published by the American Medical Association.

"Many of the services and operations performed by employees at airports have a direct bearing on the airworthiness of aircraft and the safety of operation of aircraft carrying the general public," he said.

"The quality of performance of employees servicing and maintaining aircraft is a real concern of those charged with assuring the safety of air commerce. It has been adequately demonstrated that quality of performance can be significantly related to the level of physical and mental health maintained."

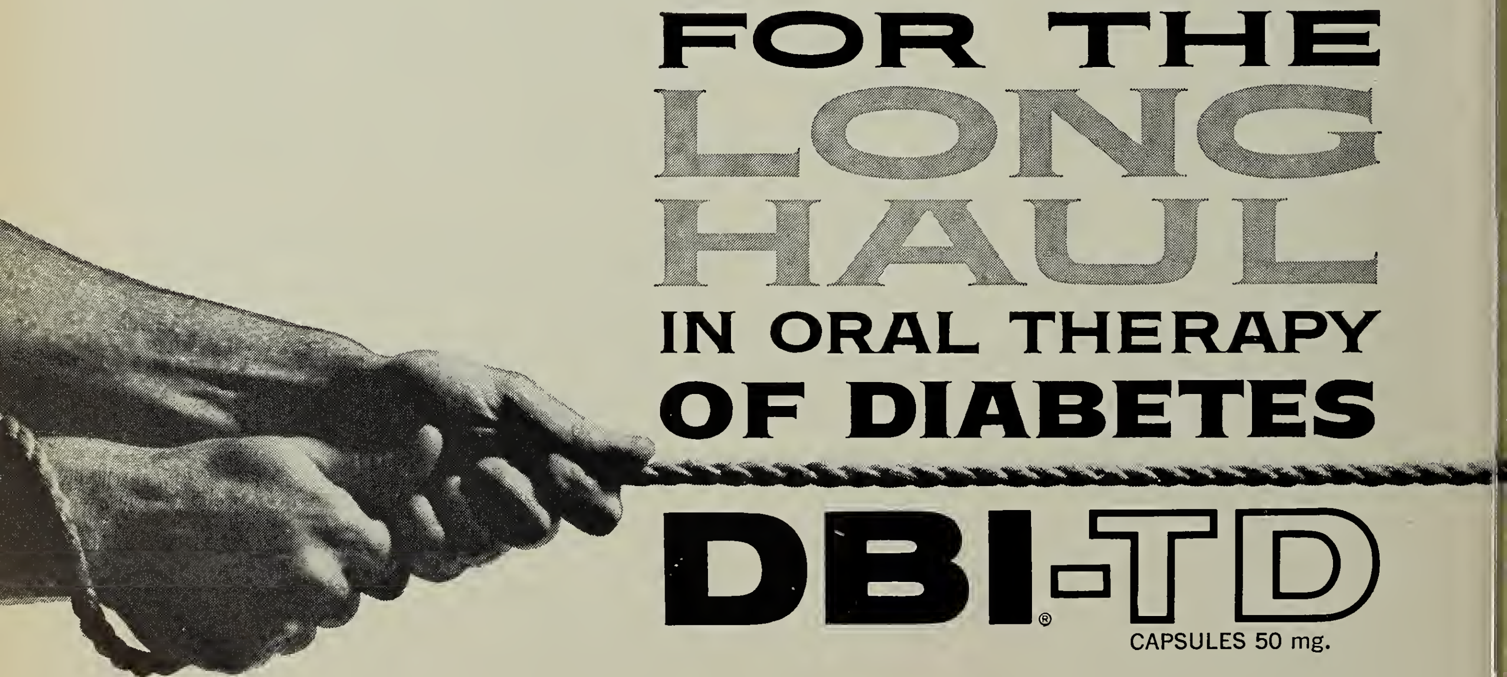
Also related to air safety are provisions for crash rescue and associated emergency medical care, Dr. Reighard, chief, medical standards division, aviation medical service, FAA, said.

More than one-half of air transport accidents occur at or near airports, he said, and a medical facility in existence for other purposes could render effective rescue and medical care services in such events.

The mere presence of a large airport population at distances somewhat removed from ordinary medical facilities would justify an airport medical facility, he said.

At one airport studied, he said, approximately 3,000,000 passengers are accommodated each year, 5,000 persons are employed, and 3,000,000 non-passengers are visitors. The latter group would include relatives, friends, and associates of passengers as well as suppliers, ground transportation personnel and others having business at the airport but not actually employed there, he said.

A recent survey of airports by the FAA showed that of 20 airports with more than 5,000 employees each, only two had medical programs of sufficient scope to meet most needs, Dr. Reighard said. Other airports meet medical needs in varying degrees, ranging from many with only on-call emergency services supplied by private physicians to a few where an airline medical department provides a comprehensive program for a large concentration of their employees, he said.



No employer at the one airport studied provided health services for employees which could be considered an integrated occupational health program, he said, adding:

"The most comprehensive programs found were those of several airlines, especially those having a central medical department. Even the most comprehensive programs, however, included, at the most, preemployment examinations, periodic examinations of flight crew only, periodic audiometric examinations of selected ground personnel and provisions for emergency medical care at the offices of appointed physicians in the local area."

The FAA requires periodic medical examinations of all pilots, co-pilots, navigators and flight engineers.

The nature of employment of approximately 70 per cent of the employees, including aircrew, mechanic and maintenance personnel, air traffic controllers, and food personnel, "clearly demonstrates the need for periodic medical examinations for reasons of safety, health maintenance and public protection," Dr. Reighard said.

The lack of integrated occupational health programs, however, cannot be attributed to a lack of interest on the part of employers, but to the cost factor, he said.

While the total number of airport workers is large, he said, the number employed by a single company is relatively small and the cost of providing such programs is prohibitively high for small employee groups.

Dr. Reighard suggested as possible methods of organizing airport medical facilities the following:

—A cooperative plan initiated and administered by an association of airport company employers who, collectively, would provide a sufficiently large employee group to justify an effective medical program.

—A private clinic, operating as a concession in a relationship to the airport authority similar to that of other concessionnaires.

—Federal regulation to require and specify the nature of medical services to be maintained by airports.

—Independent operation by the airport authority.

—Operation by the airport authority contracting with a local medical society for professional care or contracting with an established medical institution for professional services.

Dr. Reighard said his opinions did not necessarily reflect the views of the FAA.

DIFFERENTIAL CAROTID LIGATION. F. P. Smith. J. Neurosurg., 19:787 (Sept.) 1962.

Differential carotid ligation is designed to reduce pulsatile pressure in an intracranial aneurysm and still maintain blood flow through the cervical portion of the internal carotid artery. This technique in 17 cases is described.

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REFERENCES AND REVIEWS

CLINICAL SYNDROME OF ANOMALOUS POSITION OF POPLITEAL ARTERY: DIFFERENTIATION FROM JUVENILE ARTERIOPATHY—M. Servello. Circulation, 26:885 (Nov.) 1962.

The author describes an unusual case of abnormal course of the popliteal artery, which, instead of passing between the two heads of the gastrocnemius muscle, strayed medially, passing under its femoral insertion. This led to a particular clinical syndrome, which should be kept in mind in the differential diagnosis of arterial diseases of youth. Diagnosis may be made only with the aid of a serial arteriography and a new clinical test: oscillography with forced plantar hyperextension.

* * *

SPONTANEOUS RUPTURE OF THE SPLENIC ARTERY IN PREGNANCY—I. K. Furler, D. N. S. Robertson, H. J. Harris, R. R. L. Pryer. Lancet, 2:588 (Sept. 22) 1962.

An aneurysm of the splenic artery ruptured at the 27th week of the 4th pregnancy. The symptoms were severe upper abdominal pain and fainting. Apparent recovery for six hours was followed by collapse requiring immediate massive blood transfusion, laparotomy, rapid cesarean section, and splenectomy.

* * *

NATURE OF CORTICOSTEROID EFFECT IN RHEUMATOID ARTHRITIS—H. F. West. Lancet, 2:590 (Sept. 22) 1962.

Evidence is presented here for the hypothesis that the beneficial effect of corticosteroids in rheumatoid arthritis is not due to an anti-inflammatory action. The main evidence stems from the observation of the number of new bone erosions that appear during controlled trials of prednisolone in low dosage versus nonhormonal anti-inflammatory agents.

* * *

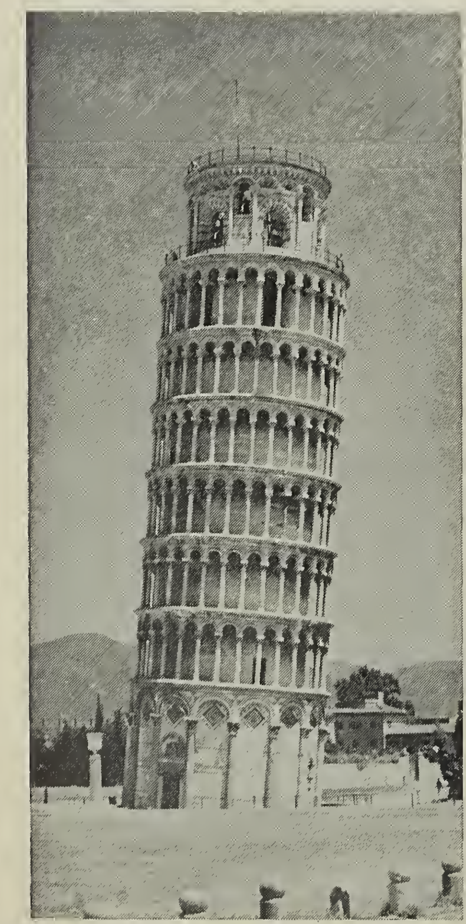
FATAL REACTION TO SULFADIMETHOXINE (MADRIBON)—T. L. Jarkowski and E. E. Martmer. Amer. J. Dis. Child., 104:669 (Dec.) 1962.

A 12-year-old girl developed fatal toxic epidermal necrolysis and leukopenia following sulfadimethoxine therapy. The authors believe that this is the seventh case of toxic epidermal necrosis reported in the literature and the first which was fatal. The histological alterations are described in detail and a brief review of other cases is presented. Positive leukoagglutinin tests using this drug accounted for the leukopenia and further strengthened the assumption that the drug was the primary offender.

* * *

LINEAR NEVUS SEBACEOUS OF THE FACE ASSOCIATED WITH CONVULSIONS AND MENTAL RETARDATION—R. C. Feuerstein and L. C. Mims. Amer. J. Dis. Child., 104:675 (Dec.) 1962.

Two cases of facial linear nevi sebaceous, identified by biopsy and associated with mental retardation and convulsions, were studied. Both children possessed these skin lesions from birth, and in each case in the midline of the forehead and nose. Each child had focal electroencephalographic abnormalities. Because of the rarity of this type of skin lesion, it is speculated that the neural and cutaneous abnormalities are related and that these children represent a distinct variety of neurocutaneous syndrome which the authors believe has not been previously reported.



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1. *Methyltestorone-Thyroid in Treating Impotence,* A. S. Titeff, *General Practice, Vol. 25, No. 2, Feb., 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations,* L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism, August 1959.*

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New 'Wrinkle Remover' Of Unproved Value

There is no scientific evidence that products containing placenta extract are potent agents for removing wrinkles from the skin, according to a statement in the November 10 *Journal of the American Medical Association.*

In answer to a question submitted to the *Journal* on a new placenta extract jelly, Redeema, Joseph B. Jerome, Ph.D., secretary of the A.M.A. Committee on Cosmetics, said:

"On the evidence available, this product is not considered to be more effective than any good quality emollient cold cream."

Redeema, manufactured by Maradel Products, Inc., New York City, was introduced in major cities in October. In an article in the October *Pageant* magazine, studies in the United States and Argentina were cited indicating that the preparation was an effective wrinkle remover.

However, Dr. Jerome said these tests lacked controls, objective measurements and extended use.

In one of the U. S. studies lasting 14 days and involving 25 women, he said, all the subjects applied a lubricating cold cream following use of Redeema. No group using cold cream alone was included in the study for comparison purposes, he said, and the small degree of improvement claimed could well have been produced by the use of the cold cream alone.

In the other U. S. study involving 20 subjects for a three-week period, improvement was claimed for 18, he said. But, he said, the only criterion used for evaluation appears to be the subjective impression of the investigator relying on visual observation.

The Argentina study covered a period of about a year, Dr. Jerome said, but again there were no controls using lubricating cream alone and the criteria for assessing the degree of improvement were not reported.

Redeema is a jelly-like, greaseless substance containing 10 per cent placenta extract, according to the manufacturer. The *Pageant* article said the placenta of cattle, the membrane that envelops the fetus in the womb, was used in the product.

Commenting on the magazine's statement that the placenta contained "biogenic stimulants," Dr. Jerome said the fact that scientists have failed to isolate any such active ingredients from placenta "casts serious doubts as to their existence."

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Approved Medical Schools Now Number 87

Two medical schools were added to the list of accredited institutions during the past year, bringing the total to 87, according to the annual report on medical education of the American Medical Association.

The new additions are the University of Kentucky College of Medicine, Lexington, and the California College of Medicine, Los Angeles, formerly the College of Osteopathic Physicians and Surgeons.

Approval is granted by the A.M.A. and the Association of American Medical Colleges. There are now no unapproved medical schools in the nation.

The 1961-62 report, prepared by the A.M.A. Council on Medical Education and Hospitals, said "10 or 12" new medical schools are currently being planned.

Five universities—Brown, Rutgers, Connecticut, New Mexico and Texas—are proceeding with plans announced last year to establish two or four-year medical schools, the report said, adding:

"In almost every state there is some consideration for the possibility of developing new schools within the next decade. Of the many states that have initiated formal or informal considerations of the feasibility of establishing a new school, Arizona, California, Maryland, Massachusetts, Michigan, New York, and Ohio seem most likely to be the sites of new schools in the foreseeable future."

Sixty-seven medical schools completed or began construction of additional facilities in the 1961-62 school year, the council reported. As in the previous year, about three times as much money was allocated for the completion of research facilities as for teaching, "emphasizing again the difference in availability of funds for support of these interdependent but sometimes competing functions," it said.

However, almost twice as many dollars were spent to complete medical service facilities in 1961-62 as in the previous year, and the council said it is "apparent that medical schools are giving increasing attention to constructing and modernizing their hospital and clinical facilities."

Reporting on the number of applicants to medical schools, the council said a decline was recorded for the fifth straight year.

"The decrease amounted, however, to only 16 students, hardly a significant number, and it now seems probable that the formerly progressive decline has been checked," it said. "Based upon estimates of applications for the 1962-63 class and increased enrollments in undergraduate colleges, the expectation is that the number of applicants will be shown to have increased for 1962-63 and will continue to increase for several years."

Although various explanations have been offered for the decline in medical school applicants, the

(Continued on Page 32)

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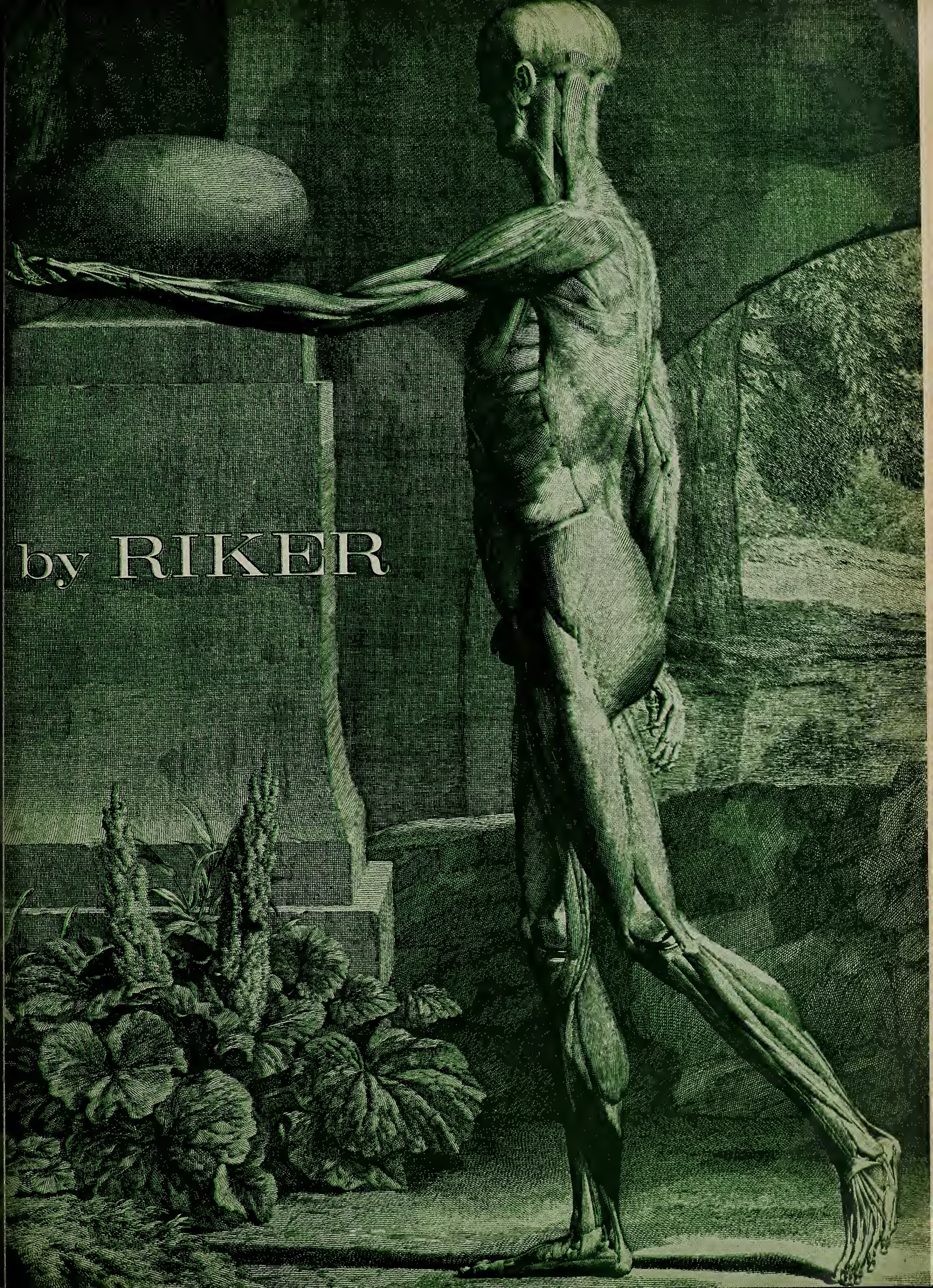
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Drug Identification Guide Unveiled by A.M.A.

An identification guide to more than 5,000 drugs was published by the American Medical Association.

It is expected to be a valuable tool in a variety of situations, particularly in the treatment of poisoning cases due to drugs in tablet or capsule form.

The guide, appearing in the December 22 *Journal of the American Medical Association*, was designed as an aid for physicians, pharmacists, hospitals, law enforcement agencies, poison control centers and others involved with drugs.

The 5,000 solid dosage drugs, representing the bulk of the nationally distributed prescription pharmaceuticals, are coded on the basis of physical appearance, such as dosage form (tablet, soft or hard gelatin capsule), size, shape, color and markings.

One of the primary reasons behind the development of the guide was the need for quick identification of drugs taken by poisoning victims so that personnel in hospital emergency rooms could treat the patient properly, Joseph B. Jerome, Ph.D., assistant director of the A.M.A. Department of Drugs, said.

In such emergencies when the drug cannot be identified through normal channels, he said, the guide could mean the difference between life and death.

When the characteristics of an unknown drug are matched to those in the guide, the possible identity can be narrowed to one, or at most, a relatively few drugs. After the possibilities are narrowed to a few drugs, a physician would most often be able to draw a conclusion as to its identity from his knowledge and the patient's symptoms.

In non-emergency situations, when time is not a factor, final identification could be established by chemical tests of the remaining alternatives.

The guide is expected to have many diverse uses.

A private physician, for example, could refer to it when confronted by a new patient who has been taking drugs which cannot otherwise be identified or traced.

A coroner might use it as an aid in establishing cause of death.

The guide could help police departments in handling illegal drug traffic and with such commonplace problems as identifying drugs carried by persons found unconscious on the street to determine, for instance, whether the individual is under the influence of alcohol or in a diabetic coma.

"It is hoped that every hospital, every poison control center and every police department of significant size will obtain a copy of the guide," Dr. Jerome said.

The guide was published in the *Journal* to assure wide distribution. In this way it will reach 195,000

(Continued on Page 38)

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Cartilage Tested to Speed Wound Healing

Cartilage, a gristle type of connective tissue attached to bones, has been used to hasten wound healing in animal experiments, according to an article in a scientific journal published by the American Medical Association.

The work was reported by John F. Prudden, M.D., Othmar Gabriel, Ph.D., and Bruce Allen, B.S., Columbia Universitity College of Physicians and Surgeons, New York City, in the January *Archives of Surgery.*

The researchers said it was possible to extract a repair-stimulating principle from the cartilage of bovine windpipes which produced "marked acceleration" of wound healing in rats when given in a solution by injection early in the healing process.

It appears that the effect is mediated through the transportation of this substance from the point of injection to the wounded area via the blood stream, they said.

Preliminary evidence suggests that the repair-stimulating principle is a protein, they said. It also appears that the eventual isolation and purification of the active principle can be accomplished, they added.

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Approved Medical Schools Now Number 87

(Continued from Page 10)

council said "the problem seems to be largely the fact that many new and important careers have opened up for the college graduate, during a period of years in which a relatively small group of men and women reached college age. In retrospect it would seem that this heavy competition for the depression crop of babies should have been anticipated by the profession . . . and accepted with greater equanimity. In spite of the many cries of alarm, there is little evidence that the profession has suffered any real harm through lack of applicants to date."

The total number of students enrolled in medical schools for 1961-62 was 31,078, which represents an increase of 790 students over the previous year, largest increase for any one year since 1951, the report showed. Approval of the California College of Medicine accounted for 355 of the 790 additional students.

A group of students deserving further study are those transferring from foreign medical schools with advanced standing, many of whom are American citizens, the council said.

"While most medical schools still do not consider such applicants, a few schools have admitted selected students on an experimental basis, apparently with generally successful results," it said. "It would seem reasonable to expect more American schools at least to consider such applicants in future years."

Twenty-two such students were admitted to medical schools in this country in the 1961-62 school year.

The report included information on students in graduate training in the medical sciences in an effort to estimate the supply of future teachers for new and expanded medical schools. Future clinical faculty members are more likely to be found in residency and clinical fellowship programs, the council said, and a survey showed that all but four of the medical schools reported students in some phase of graduate training in the basic medical sciences.

....the first choice of many physicians to relieve aches, pains, fever, and general malaise of colds and flu.

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Isolation of German Measles Virus Described in *J.A.M.A.*

Isolation of the virus that causes German measles is described in the November 10 *Journal of the American Medical Association.*

John L. Sever, M.D., Gilbert M. Schiff, M.D., and Renee G. Traub, B.A., National Institute of Neurological Diseases and Blindness, Bethesda, Md., reported on studies which showed that the virus could be recovered from the great majority of military recruits and children with German measles in several geographic locations.

Isolation of the virus makes immunization against the disease theoretically possible through development of a preventive vaccine, they said.

German measles is a frequent cause of mild illness among children and military recruits and when contracted in early pregnancy can cause malformation in babies, the researchers pointed out. Studies have shown that 18 to 19 per cent of live born children are abnormal if German measles occurs in the first three months of pregnancy and 47 to 50 per cent of infants are affected if infection occurs in the first four weeks of pregnancy, they said.

In addition to animal investigations, the researchers conducted studies with human volunteers which showed that the virus could produce the disease in susceptible individuals and that the virus could subsequently be recovered from these patients. This established that the agent was the German measles virus, the authors said.

The possibility that other strains of the virus, or other agents, are also capable of producing the disease is being investigated, they said.

The group said their report "confirms and extends" the methods and findings of two other research groups headed by Drs. P. D. Parkman and E. L. Buescher, who reported recovery of a so-called "rash agent" from recruits with German measles earlier this year. It is "highly probable" that the agents recovered in all of these studies are the same, the Bethesda researchers said.

Drug Identification Guide Unveiled by A.M.A.

(Continued from Page 22)

subscribers immediately. An additional 25,000 copies are available at the regular cost of a single issue of the *Journal* (45 cents).

Although there are other drug identification aids of limited scope, such as those published by individual drug firms, the A.M.A. guide is the only one that attempts national completeness.

The painstaking work of coding the drugs extended over a period of four years. The project was begun under the direction of John J. Hefferren, Ph.D., now with the American Dental Association, Chicago, and taken over by Dr. Jerome in 1960.

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LITERATURE AND ADDITIONAL REFERENCES AVAILABLE ON REQUEST

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Children's Problems Linked to Relationship with Father

Unwholesome father-child relationships are associated with a high incidence of certain emotional problems in children, according to a recent study by four Chicago researchers.

Data on 405 patients on file at the Institute for Juvenile Research, Chicago, were used for the study reported by Maurice J. Rosenthal, M.D., Ernest Ni, Ph.D., Melville Finkelstein, Ph.D., and Gloria K. Berkwits, M.D., in the November *Archives of General Psychiatry*, published by the American Medical Association.

Purpose of the study was to determine whether any of a list of 29 different emotional problems of children were associated with six types of father-child relationships—reasonably wholesome; controlling and rigid; pushing to early responsibility; punitive; cold, distant and neglectful; and conflicting parental authority.

No problems correlated with the reasonably wholesome group, the researchers said, and some problems were not associated with any of the father types, namely, learning difficulties, generally immature, overly competitive with sibling, frequent nightmares, enuresis, speech defects, or sleep disturbances other than nightmares.

More problems were associated with the punitive father-child relationship than with any other father types, and the problems were similar to those associated with conflicting parental authority, the study showed.

Most cases in the punitive group involved physical, rather than mental, punishment but were rarely of marked brutality, the researchers said.

Problems associated with both groups included lying, stealing, disobedience, temper, bullying, and depression, they said.

Commenting on the similarity of problems in both these groups, the researchers said, conflicts over the raising of a child almost invariably pertain to methods and degrees of discipline. At least one of the conflicting authorities—usually the father—would be aggressive in disciplining the child and thus would offer the child the opportunity for identification with the aggressor as in the punitive syndrome, they said.

It is generally believed that one reason for the association between the punitive parent and aggressive problems in the child is that punishment arouses resentment which increases the child's hostility and justifies rebelliousness, they said.

The study also showed that in the group where rigid control of the child was exercised by the father the child's associated problems were submissiveness, lying, stealing, truancy from school, excessive competition with other children, and depression.

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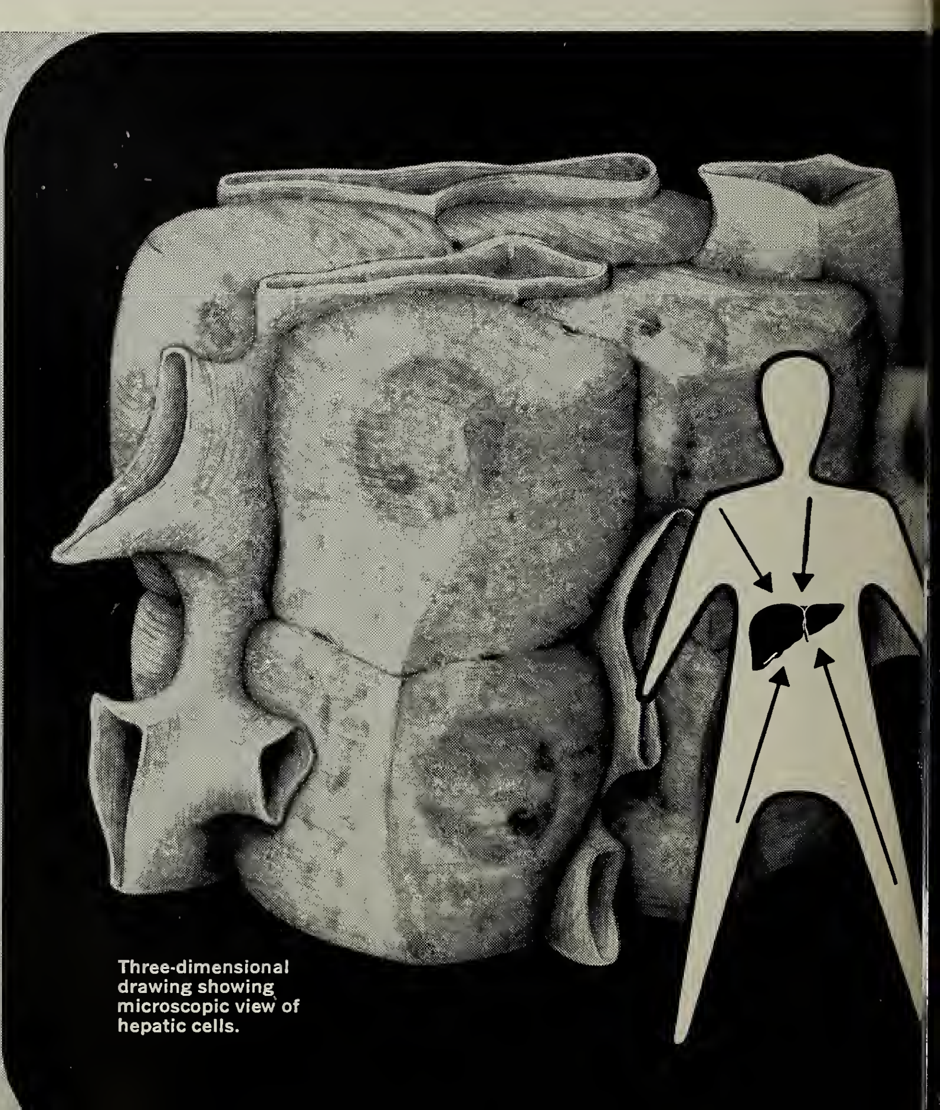

Three-dimensional drawing showing microscopic view of hepatic cells.

tionship, it was found that the child was frequently teased. Other problems associated with this relationship were lying, stealing, disobedience, shyness, and destructiveness.

There were too few cases of fathers who pushed their children to early responsibility to draw any definite conclusions, the researchers pointed out.

Although not considered definite proof, the findings do provide a basis for believing that an unwholesome father-child relationship may be a factor in the cause or perpetuation of certain children's problems, the group concluded.

Blood Warmer Recommended For Massive Transfusions

The incidence of heart arrest among patients receiving massive blood transfusions is "markedly reduced" when the blood is warmed to about body temperature, Drs. C. Paul Boyan and William S. Howland, New York City, said recently.

The two physicians compared the incidence of heart arrest among two groups of patients undergoing the same type of operation (radical surgery for cancer) under similar conditions, one group being transfused with cold blood and the other with warmed blood.

Reporting in the January 5 *Journal of the American Medical Association,* they said there were 21 heart arrests among 36 patients in the "cold blood" group but only 1 heart arrest among 45 patients who received warmed blood.

"Patients who rapidly received large amounts of warmed bank blood were warm, dry, and pink, with readily obtainable blood pressure and pulse, and regained consciousness shortly after the end of the operation," the researchers said. "This is in sharp contrast to those who had received massive transfusion of cold bank blood and presented the picture of shock."

The patients in this group were cold, shivering, and had mottled skin, they said, their blood pressure and pulse were difficult to measure and some had prolonged recovery from anesthesia, they said.

These results, they said, "lead us to believe that the bank blood should be warmed to body temperature when given rapidly and in large amounts."

Massive transfusion of cold blood will significantly lower the body temperature, they said, and there is sufficient evidence to indicate that this has unfavorable effects upon the heart and circulatory system as well as other bodily processes.

A mechanism was devised to warm the bank blood as it is being transfused, the researchers said. The blood warmer can be incorporated easily into the transfusion setup in the operating room during massive blood replacement, they said.

The authors are affiliated with the department of anesthesiology, Memorial Sloan-Kettering Cancer Center.

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Medicine and Engineering Father New Science

Medicine and engineering, once poles apart, have merged to form a new science, biomedical engineering, according to a report in the November 17 *Journal of the American Medical Association.*

J. Harold Upton Brown, Ph.D., chief, special research resources branch, National Institutes of Health, Bethesda, Md., writing in the *Journal*, said:

"A new science is now arising which bridges this gap between the physical sciences and the life sciences and which draws upon each of them for knowledge and support. This area . . . includes many aspects of biophysics, bionics, cybernetics, and medical electronics."

Within the last few years, the biological scientist has found that the engineer can contribute much more to the life sciences than the mere design of instruments, he said. The new ideas of control theory, which are rapidly developing in engineering circles, can be applied to an understanding of the regulation of many bodily processes, he said. The computer can be arranged to simulate the living system by means of mathematical models, providing new insight into operation of many biological systems.

These studies, he said, require not only a considerable skill in engineering but also a thorough understanding of the biological process to be investigated. There are few individuals well trained in both medicine and engineering, Brown said.

"The demand is heavy and the supply minuscule," he said. "It is estimated that several hundred such trained scientists will be needed by 1970 in medical schools, graduate schools, engineering schools, government and private research laboratories, and in other as yet unforeseen positions."

At present, he said, there are about eight such "hybrid individuals" being trained a year, most of the programs being offered in schools of engineering with a few in medical schools.

They are designed to produce Ph.D. scientists in either engineering or medical sciences with a firm grounding in the ancillary area, he said.

It should be emphasized, he said, that the biomedical engineer will be a fully competent life scientist capable of carrying out independent or collaborative research at the highest academic levels.

Research grants, fellowships, graduate research training grants, and special research resource center grants are now available to qualified applicants in biomedical engineering, he said.

PROGRESSIVE MUSCULAR DYSTROPHY—J. M. Espadaler, M. Balcells, J. Jubert, A. Mirada, and J. Ocon. Med. Clin., 39:174 (Sept.) 1962.

On the basis of 25 unselected cases of progressive muscular dystrophy (PMD), the authors review the clinical, histologic, radiologic, bioelectric, and biochemical characteristics of this hereditary disease. Semeiology, etiopathogenesis, and differential diagnosis are discussed.

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Sex Hormone Studies

The Effects on the Cellular Membrane Potentials and Contractility of Isolated Rat Atrium

ALVARO L. GIMENO, *M.D.*, MARTHA GIMENO, *M.D.*, and J. LEYDEN WEBB, *Ph.D.*, Los Angeles

• The effects of estradiol, testosterone and progesterone on the electrical and mechanical characteristics of rat atria were determined. Cellular membrane potentials were obtained with microelectrodes and the contractility recorded from a sensitive strain gauge. All three steroids at concentrations near 10^{-5} M produced characteristic changes in the membrane potentials, the most striking effect being a pronounced slowing of the depolarization of the action potential, without simultaneously reducing the magnitudes of the resting or action potentials. As a result, there was slower impulse conduction in the atria, a lengthening of the action potential and a consequent increase in the refractory period. The repolarization rate was slowed. These changes are due to effects on the transmembrane fluxes of Na^+ and K^+, a decrease in permeability being assumed.

These effects are similar to those produced by the standard antiarrhythmic drugs, such as quinidine; and these steroids, particularly testosterone, have been found to be potent in the prevention and abolishment of atrial arrhythmias, both in vitro and in vivo. The steroids also block the effects of acetylcholine on the atria and this may play a role in the reduction in excitability and automaticity.

Testosterone, but not estradiol nor progesterone, exerts a temporary stimulation of the atrial contractility, which is not due to any effect on the membrane, but is related in some manner more directly to the contractile systems.

ALTHOUGH A GREAT DEAL is known about the effects of the male and female gonadal hormones, very few investigations of what part they play in cardiovascular actions have been made. Beyond the knowledge of their modification of the development of atherosclerosis and the indications that they have a vasodilating effect, very little is known of them in this regard. Particularly neglected is the question of possible direct influences in cardiac function. The reports on estradiol, progesterone and testosterone are not consistent, some indicating that they increase and some that they decrease myocardial contractility. Much of the work has been done in intact animals where direct mechanisms are difficult to distinguish from reflex and other compensatory phenomena. Electrocardiographic studies have demonstrated definite effects, but again it is difficult to decide whether these are direct or not. The present report is concerned with the direct effects of estradiol, progesterone and testosterone on the contractility and cellular membrane potentials of isolated rat atria, and with the bearing that these effects have on cardiac dysrhythmias.

From the Department of Pharmacology, School of Medicine, University of Southern California, Los Angeles 33.

Presented as part of the Basic Science Session at the 91st Annual Meeting of the California Medical Association, San Francisco, April 15 to 18, 1962.

TABLE 1.—*Effects of Estradiol, Progesterone and Testosterone on Isolated Rat Atria*

	Estradiol (7.3×10^{-6} M)			Progesterone (6.3×10^{-6} M)			Testosterone (6.9×10^{-6} M)		
Parameter	Mean of Controls	With Estradiol	Per Cent Change	Mean of Controls	With Progesterone	Per Cent Change	Mean of Controls	With Testosterone	Per Cent Change
Resting potential (mv.)	68.6	68.7	+ 0.1	72.1	72.1	0.0	67.6	67.5	− 0.1
Action potential magnitude (mv.)	79.9	79.6	− 0.4	83.8	82.4	− 1.7	77.8	78.7	+ 1.2
Overshoot (mv.)	11.3	10.9	− 0.4*	11.7	10.3	− 1.4*	10.2	11.2	+ 1.0*
Action potential duration (msec.)	42.4	46.8	+10.5	46.1	49.9	+ 8.2	49.7	61.3	+23.3
Action potential area (mv.-sec.)	1.13	1.29	+14.1	1.40	1.51	+ 7.9	1.36	1.79	+31.6
Depolarization rate (v./sec.)	60.4	47.7	−21.0	68.7	51.2	−25.5	63.6	44.4	−30.2
Repolarization rate (v./sec.)	1.27	1.16	− 8.7	1.19	1.07	−10.1	1.05	0.87	−17.1
Conduction rate (cm./sec.)	97.8	82,6	−15.5	89.9	68.7	−23.5	92.7	66.4	−28.4
Latent period (msec.)	18.7	21.9	+17.1	19.2	23.1	+20.3	18.7	22.3	+19.2
Developed tension magnitude (mg.)	458.0	410.0	−10.5	431.0	382.0	−11.3	429.0	436.0	+ 1.6
Developed tension duration (msec.)	64.2	61.4	− 4.4	68.4	66.2	− 3.2	71.4	67.2	− 5.8
Developed tension rise time (msec.)	40.6	39.0	− 3.9	41.3	39.5	− 4.3	41.4	39.0	− 5.8
Number of penetrations	180	100		242	120		255	125	
Number of atria	4	4		5	5		5	5	

*Change in overshoot given in mv.

mv. = millivolts; msec. = milliseconds; v = volts; sec. = seconds; mg. = milligrams; cm. = centimeters.

METHODS

The membrane potentials and mechanical activity of isolated rat atria electrically stimulated at a rate of 200 impulses per minute in Krebs-Ringer bicarbonate medium at pH 7.4 and 30° C. were determined, as reported previously[6] with microelectrodes and a sensitive strain gauge. The usual experiment consisted of the following four phases: (1) a 60-minute equilibration period, (2) a 30-minute control series of readings, (3) a 30-minute test series of readings following addition of the steroid, and (4) a 30-minute recovery series of readings following removal of the steroid from the bath. The effects were quite reversible so the test readings were compared with the means of the two control periods (steps 2 and 4, above) to calculate the per cent changes. Since ethanol was found to have effects on the atria, the steroids were dissolved in 50 per cent propylene glycol and added to the bath at a volume of 0.1 ml. A series of experiments showed that propylene glycol in that amount had no demonstrable action.

RESULTS

The responses of rat atria to testosterone, progesterone and estradiol at low concentrations are summarized in Table 1. Testosterone invariably produced a temporary positive inotropic effect during the first 10 to 15 minutes after its addition, but the contractile amplitude then returned to the normal value, or slightly below. This contractile stimulation was much more evident at higher concentrations; for example, 3.4×10^{-5} M produced an 80 per cent increase in contractile tension at 10 minutes.

The magnitudes of the resting and action potentials were altered insignificantly by the steroids, but the small increase in action potential was observed in each of the five experiments. The most striking changes in the electrical characteristics were slowings in the rate of depolarization and repolarization, leading to definite increases in the duration and area of the action potential. Each steroid produced the same type of effect, but testosterone was approximately twice as potent as estradiol or progesterone. The membrane electrical effects developed for 10 minutes following addition of the steroids and then remained relatively constant during the rest of the experimental period. After the steroid was washed out, it required 5 to 10 minutes for full recovery.

Acetylcholine is known to accelerate depolarization and repolarization rates, thus shortening the duration of the action potential, and this is probably a reflection of the altered rates of ionic fluxes through the atrial cell membranes. It might be expected that these steroids would antagonize these effects of acetylcholine and possibly reduce its action. This was found to be the case. Testosterone at 1.7×10^{-5} M antagonized the action of acetylcholine very effectively, a contractile depression of 68 per cent being reduced to 17 per cent. Indeed, after one to two minutes acetylcholine stimulated the atria in the presence of testosterone, so that an actual reversal of the acetylcholine effect was seen.

The significant slowing of the depolarization rate by testosterone, while simultaneously it increased the contractile tension, led us to investigate testosterone as an anti-dysrhythmic agent. Dysrhythmias such as atrial fibrillation are favored by two conditions: a shortening of the action potential (this reducing the refractory period) and an acceleration of the depolarization rate (this increasing the excitability). Testosterone on the isolated atria produced the opposite changes. Fibrillation was induced in isolated rabbit atria (by high-frequency stimulation in a medium containing low K^+, low Ca^{++} and acetylcholine) and this was maintained for 20 minutes at rates between 800 and 1200 per minute. This fibrillation normally could continue indefinitely. After addition of 1.7×10^{-5} M testosterone, reversion to normal rhythm occurred in 10 to 15 minutes, and after 3.4×10^{-5} M testosterone in four to five minutes. During the period of conversion there was a gradual slowing of the rate. We are now continuing the testing of the anti-fibrillatory activity of testosterone in intact animals.

DISCUSSION

Some investigators have noted a positive inotropic, digitalis-like effect of the steroids on isolated and intact hearts[2,5] especially when the myocardium is hypodynamic. In the present work we noted a decided stimulation by testosterone in normally contracting atria. There is a definite difference between the steroids used; estradiol and progesterone produced only contractile depression. In addition, testosterone is more potent in slowing the rates of depolarization and repolarization. The contractile stimulation by testosterone does not appear to be related to the changes in membrane potentials, since the time courses of the changes were different, so that the positive inotropic action must be explained either by a more direct effect on the contractile mechanism or a facilitation of Ca^{++} influx.

A definite effect produced by all three steroids is the slowing of the rate of conduction. This follows from the slowed depolarization and reduced excitability of the myocardium. One would predict that, at high enough concentrations, these steroids might produce various degrees of cardiac block, but no sign of this was evident in the isolated atria.

The membrane potential changes produced by testosterone are similar to those reported for clinically useful anti-dysrhythmic drugs, such an quinidine.[7,11,12] It has also been found that steroids such as desoxycorticosterone and the spirolactones,[1,9] progesterone,[10] and estrogens[3,4] can be anti-dysrhythmic under certain circumstances. In the present studies, preliminary experiments on isolated rabbit atria showed a very pronounced anti-fibrillatory action of testosterone. Furthermore, conversion to a normal rhythm was obtained without any depression of the contractility; with quinidine a depression is always seen under comparable conditions. It is thus possible that testosterone or related steroids would be of some value clinically in the prevention or treatment of abnormal rhythms due to hyperexcitability of the myocardium. In addition, the effects of the various steroids on the heart may be able to explain some of the sex differences previously observed—for example, the susceptibility to cardiac dysrhythmias induced by epinephrine.[8]

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Mental Health Programs

The Role of the Health Officer

H. D. CHOPE, *M.D.*, San Mateo

• Traditionally the treatment of mental illness has been a responsibility of state governments, but they have been unable to solve the problem with any degree of success.

In spite of rationalizations as to why a health department should not become involved in this field, more and more local health departments in California and across the nation are initiating various services in mental health.

With the widespread interest in mental health at national and state levels and in local citizens' groups, local health officers must involve themselves in this most difficult effort.

While the treatment of the emotionally disturbed and the psychotic is demanded most aggressively by the public which seeks outpatient, inpatient, and rehabilitation services on the local level, two services—consultation and education-information services—offer more hope in the promotion of mental health as contrasted with the treatment of mental illness.

OVER THE YEARS there has not existed any deep empathetic bond between the specialties of preventive medicine and psychiatry, particularly on the local level. This lack of communication was well described by Ginsberg[5] in reporting the two weeks session held in Berkeley in 1948 by the Commonwealth Fund, entitled "An Institute on Mental Health in Public Health." Traditionally in the United States the care of psychotic persons has been a state responsibility. The first tax-supported institution, known as the "Publick Hospital for Persons of Insane and Disordered Minds," was opened in Williamsburg, Virginia, in 1773. In 1841 Dorothea Lynde Dix discovered the level of treatment of the mentally ill in Massachusetts. She found the insane in "cages, closets, cellars, stalls, and pens, chained, naked, beaten with rods, and lashed into obedience."[9] She tried to elicit help from the federal government but failed. She continued her campaign but aimed it more at state governments and is given full credit for establishing at least 32 state mental institutions in her lifetime.

In the early part of this century Clifford Beers wrote "A Mind that Found Itself" and founded the "National Committee for Mental Hygiene." While this small group with very limited financing worked diligently to promote programs for the "prevention of mental illness and the promotion of mental health," the results were miniscule until after World War II. During this holocaust the role of psychiatry became predominant. There were mixed reactions to this new "invasion" of military medicine. One general officer said that he had never had "a psycho" in his regiment until a psychiatrist had been assigned to his medical staff. Another officer has stated that the Allies lost a crucial battle in Africa because so many troops had been classified "N. P." and had left the front lines. However, in spite of negative reactions, the discipline of psychiatry was firmly established by the end of the war and many servicemen and officers returning to their communities carried back some insight into the role of psychiatry.

Following World War II there developed considerable action in the mental health field. The National Mental Health Act was passed in 1946 and in 1948 the "Conference on Mental Health for Health Officers" was held in Berkeley, California.[5] In 1949 the Governors' Conference authorized a study of the treatment of mental patients in state institutions. That same year, Lemkau's book "Mental Hygiene in Public Health" was published.[7] Two years later, the Governors' Conference authorized a comprehensive survey of alternatives to long-term hospitalization of the mentally ill in state institutions. In 1953 the New York State Legislature adopted the first local mental health services act. A California modification of the idea was passed by the Assembly in 1955 but pigeon-holed by the State Finance Committee. In 1957 the Short-Doyle Act was passed by both houses and signed by the Governor. According to the "Summary of State Community Mental Health Programs as of 1960"[2] there are now 14 states which have passed legislation providing subsidization from state funds for local mental health programs—New York (1954), Indiana, Connecticut (1955), California, New Jersey, Minnesota, Vermont (1957), Maine, South Dakota, Wisconsin (1959), Oregon, South Carolina, Utah and Wyoming (1961).

Presented before the Section on Preventive Medicine and Public Health at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

In 1961 the five-million dollar study of the Joint Commission on Mental Health was published. On November 10 and 11, 1961 the Governors' Conference held a special meeting to discuss the report of the Joint Commission and in September 1961 the American Medical Association held a special session in Chicago to discuss the same report. In California in 1961 a special in-service training center was established at the Berkeley Mental Clinic. "The Role of the Health Officer and the General Practitioner in Mental Health Care" was thoroughly explored in Geneva in the first seven days of November, 1961, by the Expert Committee on Mental Health of the World Health Organization.[10] On March 12, 1962, "A Long Range Plan for Mental Health Services in California"[1] was released by the California Department of Mental Hygiene.

Within the Health Officers' Group in California there has been some resistance to the development of local mental health services. There are multiple rational reasons for this. When a health officer attempts to plan for and develop a local mental health program he finds that many of his time-proven techniques are not too helpful. Environmental sanitation—so successful in the control of malaria and enteric diseases—apparently has little effect on mental disease. There is obviously no known method of immunization against mental disease. Epidemiology—the stronghold of modern public health practice—encounters serious difficulties when an effort is made to apply its techniques to a study of mental disease. One of the basic essentials for an epidemiological study is a symptom complex which can be identified and, thereby, studied. No such single symptom complex exists in mental illness. As Dr. David Hamburg, professor of psychiatry at Stanford School of Medicine, said, "How far can we get with epidemiological studies if different psychiatrists cannot agree on the diagnosis of the same patient?" The health officer, who is trained and accustomed to dealing with the problems of prenatal care, child development and the relatively clear clinical syndromes of zymotic disease, has trouble understanding the psychiatrist who refers to his patients as "sick," "real sick," and "very sick." Many health officers might prefer to wait until psychiatry has a clearer understanding of cerebral physiology and can make and agree on definitive diagnoses than to attempt to become involved in the morasses of personality development in relation to family constellations and ecological factors. It seems to some health officers that the field of psychiatry is still in the era experienced by medicine a century ago when the diagnoses of "the fevers," "dropsy" and "laudable pus" were common.

A second problem is finance. Very few health officers have in their health departments what may be considered adequate staffing, either in numbers or variety of disciplines. If a health officer does not have currently sufficient sanitarians to carry on the newer techniques in public health such as radiation control, air pollution control and industrial hygiene, nor enough public health nurses to cover the traditional fields of preventive medicine, he may well be loath to start employing psychiatrists, psychologists, and psychiatric social workers at comparatively high salaries and place these personnel in competition for his health tax dollar, even though 50 per cent is reimbursed by the State.

A third problem is perhaps a counterpart of the first problem: There are very few psychiatrists available who have any training in public health who are able to look at the community as a whole as contrasted with the one-to-one traditional 50-minute hour of private psychiatry.

A fourth deterrent to health department administration of state-local mental health programs has been the policy of the County Supervisors Association of California which holds that the state-local financed mental health programs represent an effort to transfer the cost of the care of the mentally ill from the state tax base, where the responsibility traditionally rested, to the local tax base. The Association believes that boards of supervisors should not become involved unless the state provides a larger percentage of the costs of such local care.

A fifth deterrent is the fact that to date no objective, reliable method for the evaluation of mental health services has been designed and proven. Hence, the health officer hesitates to request budgets to support a service which he is unable to prove will significantly reduce morbidity in his community.

However, in spite of these deterrents, California's health officers have made a substantial contribution to the development of local mental health services. Of the 19 Short-Doyle Programs[8] approved for the fiscal year 1961-62 in eight (42.1 per cent) the local health officer was designated as the director of local mental health services by the respective board of supervisors. These eight programs were approved for budgets of $3,242,758 or 51.3 per cent of the total budget amount of $6,314,769. One should not come to the false conclusion that only in the Short-Doyle Programs are health officers involved in mental health services. Many health officers without Short-Doyle subsidy provide psychiatric consultation to their public health nursing staff and other staff members, and in some instances work closely with voluntarily supported mental clinics.

On the federal level of those departments of the several states and territories designated as the State Mental Health Authority, 28 are state health departments, 17 are state departments of mental health (or institutions), four are state welfare departments, and four are combined departments of health and welfare.

It is obvious that, across the nation, state health officers have accepted administrative responsibility for the promotion of mental health and that in California local health officers have also made a significant contribution to the development of local mental health services.

In California five basic services are reimbursable under Short-Doyle Programs. The distribution of services by counties is interesting. Eighteen list "consultation," 17 list "education and outpatient services," seven support "inpatient services," and only five have attempted to organize a "rehabilitation service." Four programs list a budget item in all five services, one (Los Angeles) under the direction of a psychiatric mental health director, one (San Joaquin) under a hospital administrator director, and two (Santa Clara and San Mateo) under health officers. None of these programs, as far as I know, has as yet undertaken services in three problem fields—mental retardation, improvement of local services for the senile, and adequate facilities for the treatment of disturbed and psychotic teen-agers.

As San Mateo County's program is the one with which I am most familiar, let me briefly list the spectrum of services developed to date.

1. Outpatient, including both an adult clinic (established in 1951) and a child guidance clinic (established in 1947). Both of these provide diagnosis and evaluation, individual therapy, family therapy, group therapy and, in the children's clinic, play therapy, and a cooperative nursery for emotionally disturbed pre-schoolers.

2. Inpatient service, a 30-bed open-door therapeutic community (opened in December of 1956) which serves an average of 1500 patients per year. In addition there is a six-bed alcoholic ward, and a 24-hour, 7-day-a-week diagnostic-evaluation-screening service operated in the emergency service.

3. Rehabilitation service, including a 30-patient day hospital, an after-care service, an outpatient alcoholic service and vocational rehabilitation shop, and social therapeutic groups.

4. A consultation service which serves public health nurses, social workers, juvenile probation, adult probation, schools, and private social agencies.

5. An education and information service. In this field a constant attempt is made to modify attitudes of the public regarding mental illness and provide information as to how and where help may be obtained. The second and very important function is the provision of short courses in mental illness for physicians, peace officers and ministers. We have also held a series of general public meetings around topics of special and timely interest. For the benefit of our own staff and the private psychiatrists and physicians we hold a regular bi-monthly noon-time lecture on technical subjects.

The first three services — outpatient, inpatient and rehabilitation—obviously are concerned with the treatment and restoration of the mentally ill. If the recommendations of the Joint Commission on Mental Illness are implemented by the Congress there will no doubt be considerably more federal money available for direct service to such patients. About a year ago the President appointed a committee made up of the Secretary of Health, Education, and Welfare, the Secretary of Labor and the Administrator of Veterans' Affairs to prepare an analysis of the final report of the Joint Commission to serve as a guide in developing a suitable course of action for the federal government. "A Long Range Plan for Mental Health Services in California" was released on March 12, 1962. This report strongly supports the treatment of the mentally ill "early, with continuity, with minimal dislocation and maximum social restoration." If either or both of these reports are implemented within the next few years it is inevitable that local government will be involved in the treatment of the mentally ill under some type of federal-state-local financial partnership. Whether these treatment services will be administered by health departments, by county hospitals or by separate departments of government remains to be seen.

The fourth and fifth services—consultation and education-information—come closer to the traditional type of activity carried on by health departments. Competent consultation by a psychiatrist with knowledge of public health disciplines can be of great value in sharpening the acuity and interest of public health workers when they encounter emotional problems in their daily activities. Then it is probable that, not infrequently, because of early recognition, they might take action to prevent serious emotional disturbances in their clients or patients. When citizens' groups become interested in mental health, their first demand is generally for the organization of a clinic. However, if there were only a very limited amount of funds available and a health officer wanted to initiate some activity in the mental health field, the organization of a competent consultation service would probably be most effective, although less dramatic, in promoting mental health in his community.

The second field of education and information probably also pays high dividends in a long range plan, particularly if help can be given to other groups of professionals in the community who have opportunities to see people during emotional crises. Gurin[6] of the University of Michigan Survey Research Center did some studies for the Joint Commission and reported that most people with a psychological problem have sought a resource which does not specialize in emotional disturbances. From his survey he showed that 42 per cent went to clergymen, 29 per cent to general practitioners of medicine, 18 per cent to psychiatrists and 10 per cent to social agencies. However, if the patient recognized that they were in psychological trouble—a so-called "nervous breakdown" in laymen's language—the figures were quite different. In such circumstances 88 per cent went to physicians (other than psychiatrists), 3 per cent to clergymen and 4 per cent to psychiatrists. The idea of offering training courses for general practitioners in psychiatric methods is supported by the above data and is also strongly supported by the Training Branch of the National Institute of Mental Health, by the American Psychiatric Association and by the American Academy of General Practice. At the November 1961 meeting of the Expert Committee on Mental Health of the World Health Organization, 19 authors from ten different countries reviewed the importance of (1) the role of the health officer in mental health services, and (2) the importance of the general practitioner as a primary resource in the diagnosis and treatment of mental illness.

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Diagnosis of Abdominal Lesions

The Use of Intravenous Aortography, Nephrotomography and Retrograde Aortography

STANLEY B. REICH, *M.D.*, and AUGUST SPITALNY, *M.D.*, San Francisco

• New and safe methods of investigating the kidney by x-ray visualization of its circulation are now available. This can be done either by injecting large amounts of contrast material through a vein and then taking multiple x-ray exposures of the kidneys, or by injecting the contrast material backward into the aorta to the level of the renal arteries.

Another method of x-ray examination now available is taking body section films of the kidneys when the contrast medium is in the kidney substance. This makes the kidney outline extremely sharp and allows more precise diagnosis.

SINCE THE INTRODUCTION of safer radiopaque contrast mediums, new radiographic methods of investigating pathologic changes in the kidneys and other abdominal organs have become available. They are intravenous aortography, nephrotomography and retrograde aortography. The techniques are simple and the results are very satisfactory.

Intravenous Aortography

Intravenous aortography was introduced by Steinberg and coworkers[6] in 1959. They obtained adequate visualization of the aorta and peripheral vessels by rapid injection of 50 cc. of concentrated contrast medium intravenously in each arm. A single film was taken at the time predetermined by the decholin circulation.

Various modifications of this method have been introduced, including injection through a catheter placed in the right atrium and timing the exposures by the use of radioactive isotopes.

We have performed intravenous aortography in more than 125 cases with the following simple and safe techniques:

The patient is centered over a 14 x 14 inch biplane Schonander film-changing apparatus and a scout film is taken. A 12 to 15 gauge Robb-Steinberg needle is placed in the antecubital vein either percutaneously or by cut-down. Free flow is assured by the injection of 50 cc. of normal saline solution mixed with a test dose of the contrast medium. The patient is told to expect a warm sensation and instructed when to stop breathing. With an automatic injector 100 cc. of 75 per cent Hypaque® is injected in 1 or 2 seconds. Then, three seconds after the injection is completed, the Schonander apparatus is started and one film per second is taken in each plane for a total of 15 seconds. This will record the arteriographic and nephrographic phases of the usual circulation. The vein is rinsed with saline solution and the patient waits until the films are reviewed. Occasionally we repeat the procedure if a specific area or time is to be investigated more thoroughly.

In our experience decholin or radio-isotopes are unreliable for estimating the circulation time. The use of serial films with a rapid film changer was very satisfactory and showed that there was no need to estimate circulation time.

Only one person does the injection and timing, which eliminates the confusion of two people attempting to inject simultaneously in each arm.

Fluoroscopy is not necessary, since no catheter is used.

In each of our attempts we have obtained good visualization of the abdominal aorta. Usually the visualization of the renal arteries is fair. However, it is not reliable enough to show small areas of renal artery stenosis. For this we use retrograde or translumbar aortography (to be described later). We use intravenous aortography for the investigation of intra-abdominal masses (especially if there is a suggestion of pulsation) or for investigation of possible stenosis in the other major branches of the aorta. In these situations direct needling of the aorta or retrograde catheterization may be hazardous.

There have been no serious reactions. Most patients experienced a transitory warm sensation. Thirteen were nauseated; two vomited. Surgeons who have observed the patients after we have carried out the procedure have informed us that phlebitis is not a problem.

Presented before the Section on Urology at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

From Mount Zion Hospital and Medical Center, San Francisco 15, Dr. Reich, Chief of Radiology, Dr. Spitalny, Chief of Urology.

Case 1. The patient was a 79-year-old white woman with an apparently pulsating abdominal mass. An intravenous aortogram showed no evidence of aneurysm (Figure 1). None was found on abdominal exploration.

Case 2. A 73-year-old white woman with an apparently pulsating abdominal mass was shown by an intravenous aortogram to have aneurysm below the renal arteries (Figure 2). The lesion was successfully resected.

Case 3. An intravenous aortogram of a 65-year-old white man with a palpable abdominal mass showed a thrombosed aortic aneurysm blocking the abdominal aorta (Figure 3).

The patient refused operation and died two months later of sudden massive perforation of the abominal aorta.

Case 4. A 57-year-old white woman had painless hematuria and a suggestion of a pulsating mass in the right flank. An intravenous aortogram showed a mass in the upper pole of the right kidney, stretching the arteries. Films taken in the nephrographic phase showed the mass to be relatively avascular. (See Figure 4.)

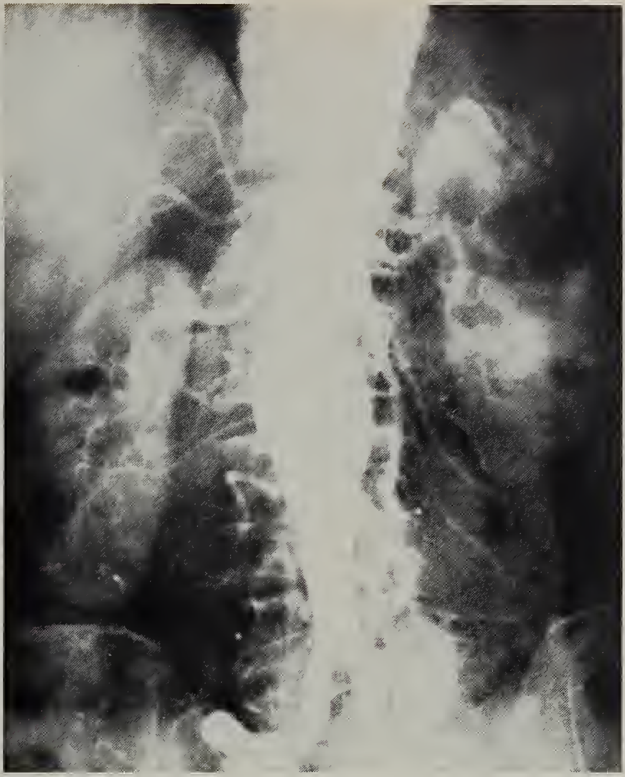

Figure 2.—Intravenous aortogram showing aneurysm.

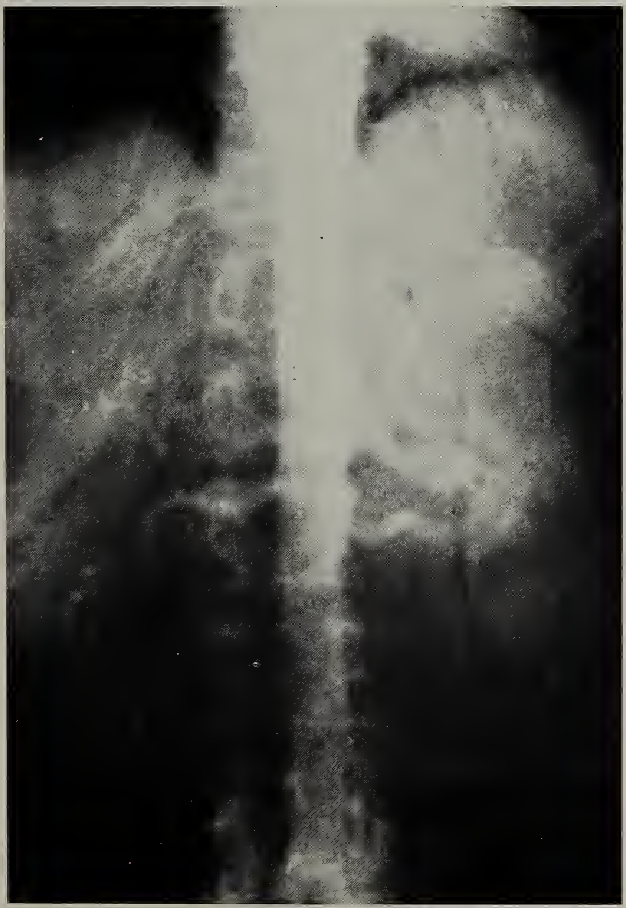

Figure 1.—Normal intravenous aortogram.

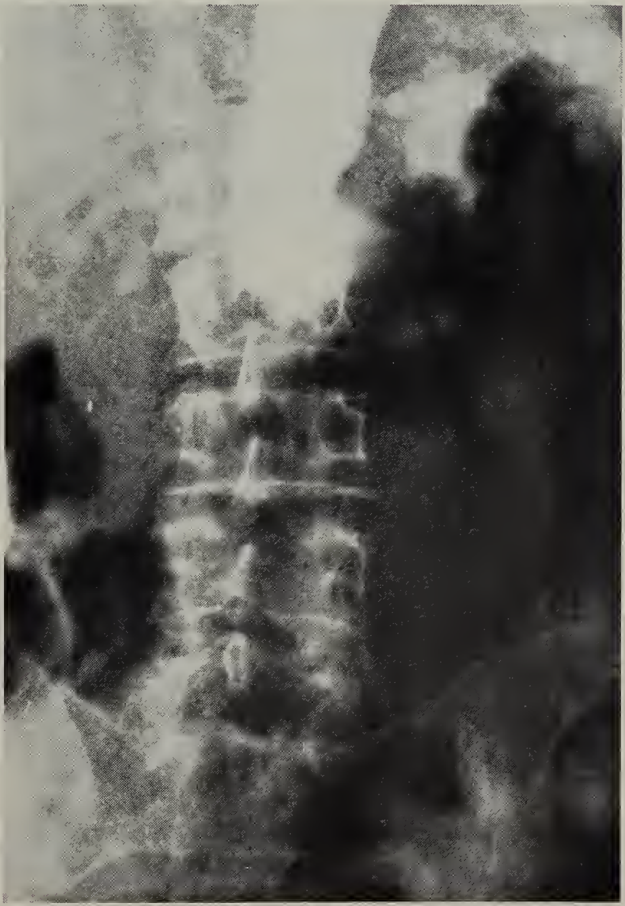

Figure 3.—Intravenous aortogram showing block of aorta by a thrombosed aneurysm.

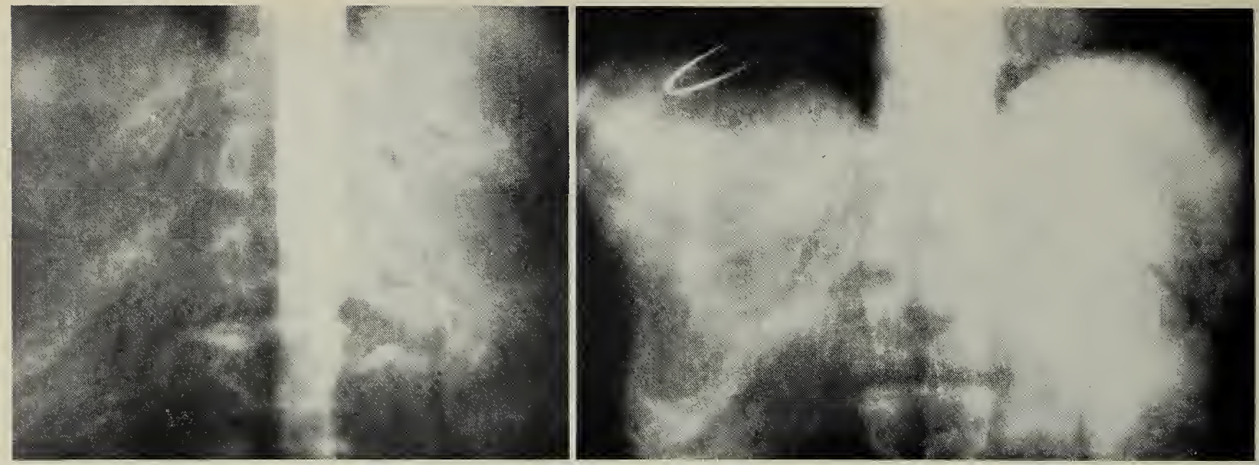

Figure 4.—*Left,* intravenous aortogram showing a stretched artery to the upper pole of the right kidney. *Right,* nephrographic phase, showing avascular area in the upper pole of the right kidney.

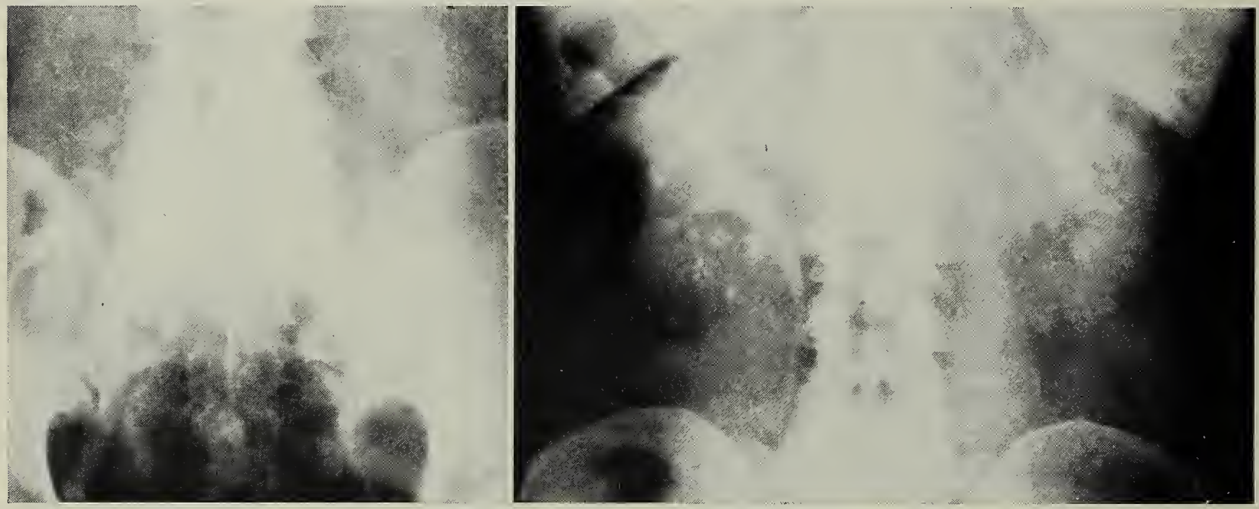

Figure 5.—*Left,* intravenous aortogram showing broadening of the iliac vessels by extrinsic pressure. *Right,* scout film showing hydronephrosis of the left kidney.

At operation a large, necrotic carcinoma was found and was resected.

Case 5. In a 52-year-old white man, ill for two months with lower abdominal cramps and diarrhea, there was a suggestion of a tender pulsating mass in the left iliac region. Intravenous aortography showed flattening of both iliac vessels by an extrinsic process. A scout film following the aortogram revealed pronounced hydronephrosis of the left kidney. (See Figure 5.)

Surgical exploration and biopsy revealed retroperitoneal fibrosis.

Nephrotomography

Nephrotomography is done by rapid intravenous injection of a large amount of contrast medium, which accumulates in the parenchyma of the kidney, causing opacity. Body section films are taken to eliminate the overlying gas shadows. The nephrographic phase persists for 30 seconds to 2 minutes.

The patient is given the usual preparation for intravenous pyelography. The ovaries or testes are shielded. Scout tomograms are taken and a test dose of radiopaque contrast medium is given. Sixty cubic centimeters of 50 per cent Hypaque® is injected as rapidly as possible through an 18 gauge needle. At the completion of the injection two tomograms are taken at the predetermined level.

We have done more than 200 examinations with this method, and consistently good outline of the renal parenchyma was obtained if good kidney function was present.

The complications were minimal—even less than with intravenous aortography.

The original indication for this procedure was the differentiation of non-opacifying renal cysts from the increased opacification of most renal tumors. However, routine use has been extremely valuable to us in outlining the actual size of each

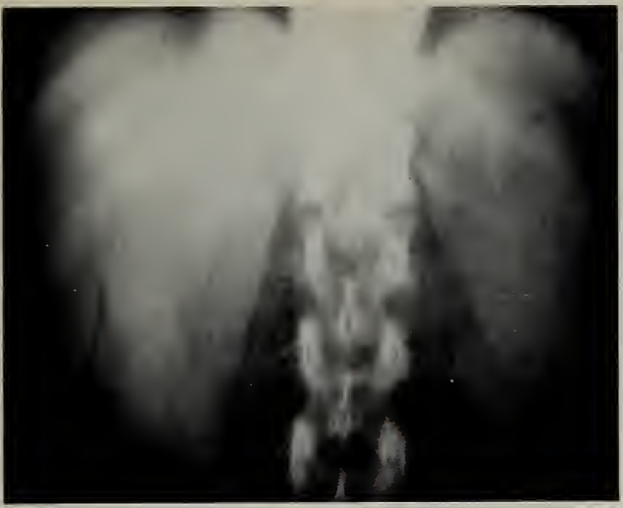

Figure 6.—Nephrotomogram showing cyst of right kidney.

kidney so that accurate comparison can be made in hypertensive patients. Useful information is obtained also in cases of renal infarction, fetal lobulation, solitary kidney, horseshoe kidney, pyelonephritis, ectopic kidney, renal abscess and extrarenal masses.

REPORTS OF CASES

Case 1. A 58-year-old white woman had occasional flank pain. Results of urinalysis were within normal limits. A nephrotomogram taken as part of a routine intravenous pyelogram showed a cyst on the lateral border of the right kidney with condensed parenchyma around it (Figure 6).

Case 2. A 63-year-old white woman had occasional hematuria and pyuria. A nephrotomogram as part of a routine intravenous pyelogram showed a lobulated avascular mass at the upper pole of the right kidney (Figure 7). At operation this was proved to be a cyst.

Retrograde Aortography

Retrograde aortography was developed by Seldinger.[4,5] We have used this method to visualize the renal arteries when stenosis is suspected and also for other purposes such as evaluation of competency of the aortic valve and for left ventricular catheterization.

First a needle is inserted into the femoral artery percutaneously and a flexible wire guide is passed through it. The needle is withdrawn around the guide and a catheter is inserted over the flexible wire into the aorta. Then the wire is withdrawn, leaving the catheter in place. The catheter can then be placed in any area of the aorta or in its branches.

To prevent recoil with injection, the catheter has a hole at its end and several along the sides.

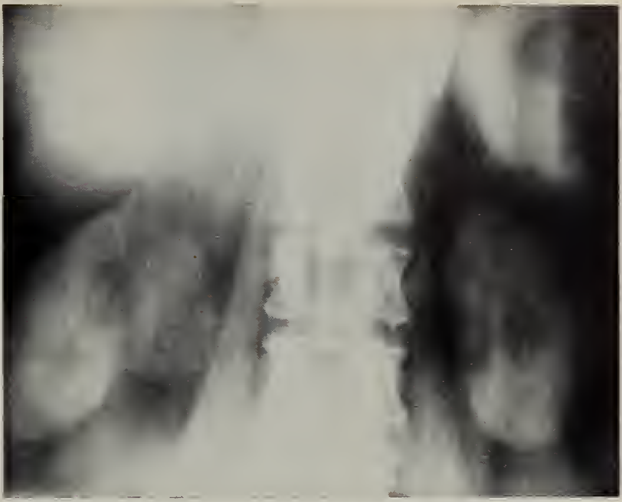

Figure 7.—Nephrotomogram showing multiple cysts of both kidneys.

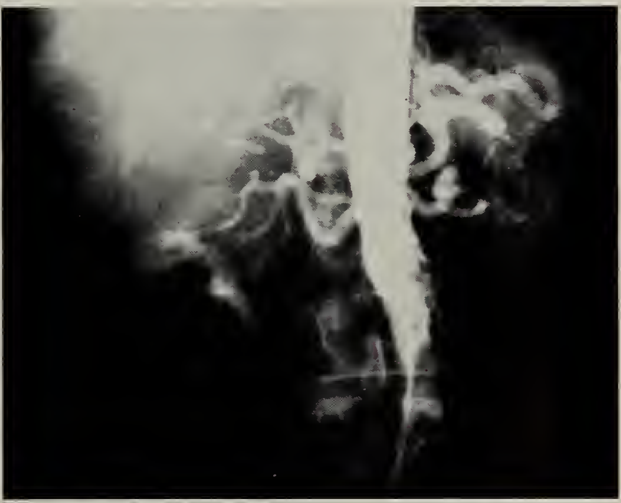

Figure 8.—Normal retrograde aortogram.

For visualization of the renal arteries, the tip of the catheter is placed at the level of the body of the second lumbar vertebra. With a pressure injector, 20 cc. of 50 per cent Hypaque is injected rapidly. One film per second for 15 seconds is taken with the Schonander rapid changer. These films demonstrate the arteriographic, nephrographic and venous phases of the kidney. The nephrographic phase is extremely important in diagnosing stenoses. (See Figure 9.)

Some physicians prefer to expose the femoral artery and catheterize it under direct vision. This is not necessary if a satisfactory percutaneous puncture can be done. Translumbar aortography is still used by some physicians.[2] It is particularly useful in the event blocked or severely atheromatous vessels are encountered. However, retrograde aortic catheterization has several advantages including considerably diminished incidence of subintimal injection and easy maneuverability of both catheter and patient.

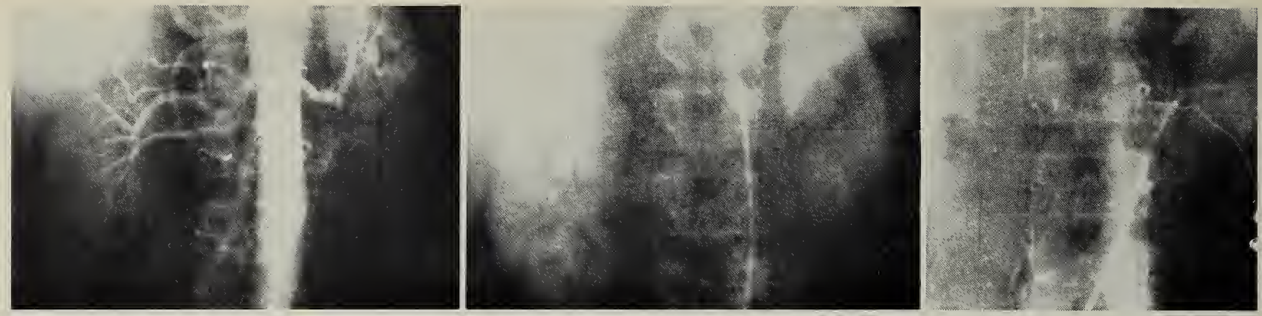

Figure 9.—*Left*, retrograde aortogram showing apparently normal renal arteries. *Center*, nephrographic phase of same case showing avascular lower pole of left kidney. *Right*, retrograde aortogram showing stenotic aberrant left renal artery.

REPORTS OF CASES

Case 1. Retrograde aortography in a 50-year-old white woman with severe hypertension of ten years' duration showed normal renal arteries (Figure 8).

Case 2. The patient was a 47-year-old white man with severe hypertension. A retrograde aortogram showed severe atheroscleromatous changes of the abdominal aorta with normal renal arteries. The nephrographic phase showed a poor nephrogram over the lower pole of the left kidney. A retrograde aortogram was done with the catheter placed lower in the region of a stenotic aberrant left renal artery. (See Figure 9.)

The left kidney was removed and the patient's blood pressure dropped to normal limits.

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Present Status of Dermabrasion

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• The use of dermabrasion for cosmetic purposes is becoming less popular due to limitations inherent in the method despite the fact that it is still the best method available for the minimizing of acne scarring. Planing for precancerous skin is increasing in demand because of definite benefits to be gained from its use. While the method has not attained universal acceptance for the latter purpose, 80 per cent of dermatologists who have tried this approach, and who answered a questionnaire, rate the benefits obtained as excellent or good. Only 3.5 per cent considered the results as poor. In a five-year period between two questionnaires, there was in general a trend away from enthusiasm for this modality, but esteem for it as a way of dealing with precancerous skin held up better than opinion of its use for cosmetic purposes.

WHILE PROBABLY Kromayer was the first to use cutaneous planing, in 1905,[4] it was not until the plastic surgeons had popularized the employment of sandpaper for the treatment of scars that Kurtin published his paper on dermabrasion in 1952.[5] Since then, many dermatologists have adopted this procedure. The reasons for this acceptance have varied but certainly many dermatologists were convinced of the value of this modality—and still are. Now, ten years after Kurtin's article, a sufficient number of dermatologists have used the treatment enough and followed enough patients for a sufficiently long time to permit accurate gauging of the values and weaknesses of dermabrasion.

COSMETIC PURPOSES

At the outset, it should be emphasized that the benefits vary with the skill of the operator and his judgment in the selection of cases. However, each practitioner assays his results through different eyes. It has been pointed out repeatedly that as a rule the subjects of this approach are happier with the results obtained than is the operator. In a like manner, one physician is more critical of the remaining scars, the hyperpigmentation and the other unfortunate results of this treatment than is another. This is not to imply that those who are enthusiastic about the procedure are too blind to see the inherent weakness. It is quite possible that they are better dermatosurgeons than are their colleagues.

Still, one must recognize and admit the weaknesses inherent in the method—regardless of the skill of the operator. For instance, it is impossible to obtain a perfect result in more than the occasional patient. This is because much of the pitting is produced by cicatricial tissue deep in the corium, pulling the epidermis down. If one were to plane deeply enough to eradicate this scar tissue, the planing would produce scarring of its own. Therefore, even repeated planing will not bring about a perfect result. Since the scarring cannot be removed completely, the improvement is relative only. We speak glibly to "50 to 85 per cent improvement." But, just what do we mean? There is no yardstick to establish these values. Furthermore, most people are capable of recognizing only the complete eradication of a cosmetic defect—not its minimization. Our insistence on *before* photographs is a tacit admission on our part that the skeptical patient may not be able to recognize the clinical "percentagewise" improvement in his appearance. While the patient may be pleased with the results, persons around him may find it difficult to see what has been accomplished. Since these relatives, friends and acquaintances are the reservoir of future patients, disappointment in the results obtained must lead to a decreased demand for this operation.

Also, the complications are not trivial. The most important ones can be lumped under the heading of "impaired appearance." After the crusts fall off, the planed skin is pinker than the surrounding tissue. No amount of "feathering" of the edges can make traumatized tissues match the surrounding skin. It is true that, in most instances, eventually the abraded area assumes the same hue as the untraumatized portions, but this may take months or even years. It is all well and good to tell the patient that the hyperpigmentation, or occasionally depigmentation, is due to his ignoring of the surgeon's advice to avoid sunlight. However, to be perfectly honest, a question that we must ask is, how is the patient in California to completely avoid sunshine? Solar radiation hits his face when he looks out of a window, drives in a car, or walks in the fog or

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Presented at a Joint Meeting with Pacific Dermatologic Association on Cutaneous Surgery before the Section on Dermatology and Syphilology at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

smog. The wearing of sunscreens and hats has not eliminated this problem completely.

For these reasons, and many others, planing for cosmetic purposes must be of limited value and limited applicability despite the fact that it is the best treatment for the removal of the scars—except, perhaps, tincture of time.

PRECANCEROUS SKIN

Epitheliomas may result from several different factors. However, it is well recognized that the most common cause is solar radiation, especially in blondes and redheads with fair skin and blue eyes. It is obvious, also, that such radiation does not penetrate deeply. Therefore, it seems likely that the carcinogenic effect is exerted on the superficial portions of the skin. The frequency of epitheliomas, in contra-distinction to sarcomas, lends credence to this concept. It is reasonable to assume that if the epidermis were removed, new epidermal tissue would arise from the cutaneous adnexa. In fact, Ayres and others[1] have demonstrated the validity of this supposition by careful histopathologic studies. Even in chronic radiodermatitis, the outer layers of the skin are affected more severely than the deeper ones.

Planing will remove keratoses simply and rapidly—as simply and rapidly as any method at our disposal. On the other hand, while it may be as effective as other approaches, it offers no significant advantage except that of speed in the treating of multiple lesions. Rather, its value resides in its employment to *prevent* the further development of keratoses and epitheliomas. It is well established that a patient who has one senile keratotic lesion or an epithelioma is apt to have more of them later, for the appearance of the first such neoplasm indicates that the exposed areas of the skin have been damaged sufficiently by the passage of time and the relentless beating of the sun to undergo malignant degeneration. Eradication of the new growths by surgical, chemical or radiologic methods cures the lesion; it does not prevent the growth of other tumors in other portions of the exposed skin.

On the other hand, removing the entire injured area, and replacing it with undamaged skin such as would exist in deeper adnexa would give the patient a new start. But since the new cutaneous surface would contain epithelium of the same age and heredity faults that were inherent in the tissue that was destroyed, if the patient were to expose the new skin to excessive sunshine, he could expect new keratoses and epitheliomas. Furthermore, because of the age of the tissue, it would not take as much sunshine to cause recurrences as it did originally. However, if judgment were used in solar exposure, recurrences would not be anticipated. Therefore, a potential dermatologic cripple would be given a second chance to lead a normal life without the constant threat of malignant disease and the need for repeated destructive or surgical therapy.

In 1954, an attempt was made to study this possibility in three representative patients, one with chronic radiodermatitis of the hand, one with multiple recurrent actinic keratoses and epitheliomas and one with recurring cigarette-induced keratoses and epitheliomas of the lip.[2] Two of these patients are still under observation eight years later, and the other was followed for more than two years. All obtained decided benefit. The patient with the x-radiation damage has had several keratoses but much fewer than before operation. The one with the actinic-damaged skin had no tumors in the planed areas during the more than two years that he was observed, but many such keratoses developed in the areas that were not planed. In the case of the patient with lesions of the lip, leukoplakia developed three years after planing but this responded rapidly and apparently permanently to x-ray therapy. Therefore, one could say that the procedure was successful in these patients.

Perhaps the word *successful* requires a little consideration in itself. If one expects 100 per cent preventive results in every case, then *successful* is not a proper term. But then, this would mean that there were no "successful" procedures in medicine. All the patients that I have treated in this manner have obtained benefit—an absence or decrease in neoplastic changes in the planed skin despite the fact that one would have expected an acceleration in the degenerative processes with advancing age. Furthermore, the unplaned skin acts as a control since the changes continue in these areas while the abraded surfaces remain comparatively free of these complications. While keratoses have developed in planed skin, I have never seen an epithelioma in skin so treated.

In 1957, a questionnaire was mailed to 120 dermatologists who were known to perform the operation of planing, asking about their results with the modality in cancerous or precancerous skin.[3] A hundred and three of them (86 per cent) replied. Their comments on the use of dermabrasion in senile or actinic skin were of interest. Thirty-three of the respondents had some experience in treating such cutaneous surfaces with a motor-driven whirling brush. In some instances it was difficult to determine from the replies whether the operation was done merely to eradicate preexisting keratoses or also encompassed uninvolved skin as prophylaxis against the future formation of other keratoses or epitheliomas. There was no question, however, that prophylaxis was a factor in a large number of cases and that many patients had been observed for two or three years afterward with inordinately low incidence of new tumors. Three of the respondents classified their results as fair or poor. The other 30 were at least satisfied with the results obtained and 14 of them could be classified as enthusiastic. More than 1300 cases were reported in this survey.

Even then, five years ago, there was little question among dermatologists with experience with these cases, that the treatment of the senile skin is one of the prime indications for dermabrasion. Many of them (this author included) felt that this application would become the most important use of this therapeutic modality. While new tumors can appear in the planed area, as was pointed out before, this questionnaire established that the recurrences (if this term can be applied to these new lesions) were much less frequent than those appearing in the adjacent unplaned areas or in the same patient before the planing operation. I felt that perhaps the rate of recurrence was inversely proportional to the depth of the planing.

To see what had happened to the opinions of the respondents in the five years since the survey reported in preceding paragraphs, these dermatologists were asked again for their current opinion on the value of dermabrasion in the senile skin. Of the three who were disappointed in its use in 1957, one did not answer, one said that he had not used it further and one was employing the procedure with some benefit. The other thirty seemed to feel as they had five years earlier.

RESULTS OF SURVEY

The foregoing statements represent only the convictions of the author plus a recitation of experience by a few contributors to a questionnaire. In order to determine the present status of dermabrasion among dermatologists in America, a second questionnaire was sent to 1631 fellows of the American Academy of Dermatology in the Fall of 1961. At the time of this writing, 1075 replies had been returned and the flow of replies diminished to a trickle, indicating that the number that would be received in the future would be too small to affect the statistical compilations. Since this is only a 65.2 per cent response, the question of statistical validity must be raised, for there is no way of knowing whether the 556 who were not heard from performed the procedure of planing or shunned it. The decrease in replies from the 86 per cent received in 1957 may represent decreased interest in this procedure by the dermatologists of this country.

Of these replying 517 (48 per cent) said they had never adopted this modality; 558 (52 per cent) had some experience with it. Of the latter group, 107 (19.1 per cent) had tried it, found it wanting and dropped it. Among those who still did planing, there was a tendency to do it less than five years ago:

	Proportion Using Procedure		
For:	*More (Per Cent)*	*Same (Per Cent)*	*Less (Per Cent)*
Cosmetic reasons	11.3	31.4	57.3
Precancerous skin	27.3	41.0	31.7
Other conditions	16.3	46.1	38.0

It should be noted that the decrease was much less pronounced for "precancerous skin" than for "cosmetic" and "other reasons." Two-thirds of those who had discontinued planing said they had done so because of dissatisfaction with results. Other commonly voiced explanations included lessening demand due to disappointment with results, decreased publicity in the lay press, and lack of time on the part of the practitioner. Interestingly, six per cent stopped using the procedure because of the actual occurrence of medicolegal complications or fear of them.

Among those who had never performed the operation of dermabrasion, dissatisfaction with results of others led the reasons for not doing it. This was followed in diminishing order by lack of demand on the part of the patients, lack of time, the necessity for training, the fear of entanglement in malpractice actions, the presence of more competent associates and the fear of medical complications. The more common reasons given for having never adopted this modality or for discontinuing use of it are listed in Table 1.

Opinions as to results obtained or observed were compiled for three groups—those who had never used planing, those who were still performing this operation and those who had discontinued it. The evaluations obviously are a matter of opinion and can only be looked upon as reflecting trends.

The opinions are shown in Table 2.

It is obvious that today the use of planing is considered to be more successful for precancerous skin than for acne scarring or for other cosmetic purposes. This difference is displayed even more dramatically when the opinion of those who have used the method themselves for the treatment of the actinically damaged or senile skin is tabulated. Thirty-two (20.1 per cent) of these surgeons considered the results to be excellent. Eighty-four (57.9 per cent) rated it as good, 24 (16.5 per cent) felt that the results are only fair, while 5 (3.5 per cent) classified them as poor. While some of the critics were bitter about employment of this modality, classifying it as "absurd" or a "hoax," it is obvious that this use is standing the test of time.

TABLE 1.—Reasons Given by Dermatologists for Never Having Used or for Discontinuing Dermabrasion

Reason	Never Planed		Stopped Planing		Total	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Dissatisfaction with results	135	27.0	66	64.5	201	19.2
Lack of demand on part of patients	70	14.0	13	12.5	83	8.1
Lack of time, too time consuming	63	10.6	12	12.1	75	7.2
Necessity for training	51	10.2	0		51	4.9
Associates available	33	6.6	3	3.0	38	3.5
Too old, limited practice, hate surgery, etc.	29	6.0	6	6.1	35	3.4
Medicolegal entanglement	27	5.6	6	6.1	33	3.2
Medical complications	24	5.0	4	4.0	28	2.7
Lack of facilities	14	2.9	0		14	1.4
Prefer to refer to others	14	2.9	0		14	1.4
Good results with other methods	10	2.7	2	2.0	12	1.2
Believe it to be plastic surgery	9	1.9	0		9	0.9
Cost to patient	8	1.7	0		8	0.8
No need in small town	7	1.4	0		7	0.7

TABLE 2.—Dermatologists' Opinions as to Results Obtained with Dermabrasion

	Cosmetic Purposes		Precancerous Skin	
	No.	Per Cent	No.	Per Cent
Those who never had planed:				
Excellent	8	2.8	6	10.2
Good	53	18.2	33	56.0
Fair	196	67.0	13	22.0
Poor	34	11.8	7	11.9
Those who were still planing:				
Excellent	20	6.1	34	20.0
Good	170	43.5	96	56.1
Fair	174	44.5	29	17.0
Poor	26	6.7	12	7.0
Those who had discontinued the procedure:				
Excellent	0	0.0	2	8.7
Good	15	21.5	19	82.6
Fair	31	44.4	2	8.7
Poor	24	34.0	0	0.0
All three categories combined:				
Excellent	28	3.7	42	17.6
Good	238	31.3	139	58.0
Fair	398	53.2	44	17.6
Poor	84	11.1	19	7.7

The correspondents were asked also in what other conditions they used planing. A number of conditions were listed. The ones most commonly reported on favorably were: tattoos, hyperpigmentation, seborrheic keratoses, nevi, traumatic scars, adenoma sebaceum, vascular nevi, rhinophyma, keloid, hyperkeratotic conditions, and trichoepithelioma multiplex. However, it must be stressed that there were almost as many skeptics as advocates for each of these applications.

In addition to making it clear that use of dermabrasion is fairly well confined to the improvement of scars (mainly acne) and the prevention of malignant degeneration, this list of "other uses" includes one surprise—tattoos. Most dermatologists feel that planing is of little value for tattoos. As a rule, the tattoo is too deep for removal by this method. The patient ends up with a mottled lesion that is part normal skin, part scar and part tattoo. Moreover hypertrophic scarring has occurred not infrequently following this approach in such lesions. However, many of the correspondents felt that dermabrasion is beneficial in this condition, especially for "fresh tattoos" or accidental ones following trauma. Of course, the success is dependent more on the depth of the implantation than on any other single feature.

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Recent Developments in Ocular Therapeutics

DWIGHT H. TROWBRIDGE, JR., ***M.D.,*** **Fresno**

• Triethylene thiophosphoramide, an alkylating agent of value as a palliative in cases of neoplastic disease and reticulosis, has been effective in preventing vascularization of the cornea when used locally. Since recurrent pterygium, a persistent clinical problem, particularly in the Western states, is preceded by corneal vascularization and fibroplastic proliferation, it is possible that this drug when used topically may be useful in obviating to some extent the use of radiation, which must be used with great caution to avoid the production of cataract.

In the treatment of gram-negative bacterial infection, especially Pseudomonas aeruginosa, the drug colistin has been known to be effective in some cases which were not helped by other antibiotics, including polymixin B. In the field of virus infections, a major breakthrough may have come about by the discovery that 5-iodo-2-deoxyuridine (IDU) attacks the herpes cirrus in the cornea as a metabolic antagonist. Animal experiments and some clinical studies have confirmed its effectiveness as compared with other therapeutic measures in selected cases.

In the treatment of ocular problems resulting from systemic disease fibrinolysin (plasmin) has apparently caused dissolution of the clot and restoration of circulation in some cases of retinal artery occlusion. Severe diabetic retinopathy in younger diabetic patients has been shown to regress in certain cases treated by hypophysectomy or radiation of the pituitary gland employing the cyclotron. This gland is also associated intimately with the exophthalmos of thyroid origin, and its action may be aggravated by the use of ACTH or steroids.

WITHIN THE PAST YEAR or two a number of therapeutic measures employing new principles or significant modifications of old ones have opened up new pathways of clinical investigation.

In the field of external ocular disease, the use of triethylene thiophosphoramide (Thio-Tepa) to prevent vascularization of the cornea has been interesting. This drug which is an alkylating agent of value as a palliative when given parenterally in cases of neoplastic disease and reticulosis—particularly in breast cancer[1]—is used as an eye drop in 1 per cent strength suspended in oil. Experimental work with rabbits' eyes was done at Wilmer Institute by Langham,[14] and Dr. Edward Maumenee[16] who spoke before the Western Section of the Association for research in Ophthalmology at Asilomar in 1961 told of its clinical use. It has been found useful in cases of corneal vascularization from burns, recurrent pterygia and corneal grafts. Dr. Maumenee said that in recurrent pterygia the drug should be instilled three or four times daily on alternate weeks for a month or so until there is no evidence of progressive vascularization. The only complications he noted were mild lid irritation and some corneal roughening which cleared on cessation of the drug, although crystalline deposits appearing in some corneal grafts might be related to the treatment.

This development has been of particular interest to me since my observation of cases in which beta radiation was used to prevent recurrence of pterygium confirmed the conclusions of Haik, Lyda, Waugh, and Ellis[8] that this treatment is associated with development of telangiectasis and opacities.

McDonald, Hughes and Peiffer[17] studied the cataractogenic properties of radon and Sr^{90} in rabbits, and found subcapsular opacities appearing with equal frequency following the use of each modality. When radiation was applied to the limbus area, opacities appeared directly beneath the area of treatment, usually within four to five months. In eyes irradiated over the center of the cornea the latent period was longer and opacities first appeared in the region of the posterior pole; but Puntenney and Schock[21] noted that irradiation over the equatorial region of the lens (which is the area usually treated in dealing with recurrent pterygium) was more likely to cause cataracts in the rabbits' eyes. Von Sallman[28] caused such a cataract to appear following the application of only 5,000 rep by the Sr^{90} applicator.

As to the human eye, Merriam[19] compiled a rather disturbing list of complications from radiation, including scleral atrophy, uveitis, iris atrophy, and increased (not decreased) vascularization of the cornea in addition to the complications already mentioned. Doctor and Almeda[6] produced a granular coagulum in the anterior chamber of rabbit eyes by using Sr^{90}, suggesting that glaucoma following irradiation is a potential hazard. Kamel[11] demonstrated the constant presence of round cell

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infiltration and deposition of submucous connective tissue in all cases of progressive pterygia, and it could be that radiation does its work by the retarding of this activity as well as by destroying vascular channels. Presumably, triethylene thiophosphoramide, which has been shown to inhibit cell division, acts similarly but without endangering the deeper structures.

In the field of gram-negative bacterial infection of the eye, encouraging reports have been published on the antibiotic colistin (marketed as Coly-Mycin by Warner-Chilcott). This preparation was isolated in 1950 by Japanese investigators and has been effective in some cases of corneal infection by Pseudomonas aeruginosa. In the *American Journal of Ophthalmology* for July 1960 Gordon and McLean presented an instructive case with color photographs in which topical treatments given very frequently (more than once an hour) with a solution of 500,000 units dissolved in 7.5 cc. of water were administered. The patient also received 500,000 units of the drug by intramuscular injection on two occasions, but the authors state that in light of further studies they feel that parenteral use of the drug probably did not influence the infection.

The eye, which had been severely congested, with cloudiness of the cornea and hypopyon, showed improvement by the third day. Gordon and McLean suggested that subconjunctival injection and anterior chamber lavage with colistin might be advisable in an intra-ocular infection. Experimental work with rabbits done by McMeel[18] at Wilmer Institute indicated that prompt use of the drug following corneal infection was an important factor.

In view of the serious nature of pseudomonas infection, which may even prove fatal in premature infants, as pointed out by Burns and Rhodes,[3] the prospect of a new antibiotic which may help in this infection is most welcome. Kimura[13] observed a case in which a corneal pseudomonas infection responded to colistin after Polymixin B had been given without effect, and he expressed belief that any antibiotic which shows promise of effectiveness against gram-negative bacteria is worth while.

Perhaps most exciting of new developments in external ocular therapy has been the now widely publicized treatment of herpetic keratitis with topical instillations of 5-iodo-2-deoxyuridine, termed IDU, or more recently STOXIL. It gives promise of being the first effective antiviral agent for use in ophthalmology.[12] Previously Stow and Jenkins[24] had reported encouraging results with the use of the enzyme chymotrypsin in dendritic keratitis, but in a careful study of inoculated rabbit eyes Chung and Wong[4] conclude that the use of this enzyme in herpes simplex infection may enhance the spread of the infection by removing natural barriers.

Kaufman and his co-workers attacked the problem of utilizing the action of IDU as a metabolic antagonist in the utilization of thymidylic acid in the synthesis of desoxyribose nucleic acid (DNA). Although its parenteral use is hindered by rapid metabolism and degradation, it seemed practical to try it as a local application on the avascular cornea where the almost continual presence of the drug should block DNA synthesis, which is necessary for virus multiplication. Clinical studies have confirmed this to a considerable extent. While a double blind study was not carried out, by comparison with other therapeutic measures, such as application of iodine and cauterizing agents, the results have been remarkably good. In Gunderson's[7] series of cases the average period of staining with fluorescin was 21 days and congestion lasted 41 days. Metaherpetic lesions developed in more than one-fourth of the patients. By contrast 25 patients with dendritic figures treated by IDU instillations healed within four days. In cases in which there was geographic involvement of the cornea (as described by Thygeson, Kimura and Hogan[25]) the response was not as prompt, and topical application did not seem to benefit herpetic iritis. However, it has been pointed out that herpetic uveitis may be more safely treated by corticosteroid preparations if keratitis is controlled by IDU. This preparation may be obtained as SK&F 14287 in a 1 per cent aqueous solution to be instilled in the affected eye every hour during the day and every two hours during the night period.

Developments in treatment of ocular problems resulting from systemic diseases have been numerous. Among them, the use of fibrinolysin, or plasmin, in the treatment of vascular occlusion relating to the eye has been encouraging. Plasmin is a circulating active enzyme component of normal human blood that arises from the activation of plasminogen (or profibrinolysin) by a number of blood and tissue activators, as well as by some physical factors, chemicals, and bacterial filtrates. It is prepared for chemical use by action of streptokinase, a bacterial filtrate. Severe systemic reactions to the preparation have been reported, but may be the result of impurities in the activator in the form of desoxyribonuclease (Streptodornase) and hyaluronidase, although the antigenic action of previous streptococcal infections may be one cause. Binder, Binder and Skelly[2] reported the beneficial effects of this mixture when injected subconjunctivally in subacutely inflamed eyes where there is free fibrin in the anterior chamber or synechiae formation. They felt that severe reactions in the eye came more frequently on re-injection of the drug after the lapse of a few days, which would suggest an antigenic mechanism. Scheie[22] and his associates used purified profibrinolysin activator preparations in two cases of total hyphema with elevated ocular tension. Solution of 1250 units per cc. was prepared by diluting a standard vial with 40 cc. of dextrose solution, and this was used to lavage the anterior chamber. Prompt lysis of the anterior chamber clot and reduction of ocular tension followed.

However, the principal use of this preparation has been to relieve acute obstruction of the central retinal vessels. Hecker and Zweng[9] treated a one-eyed diabetic man 62 years of age, whose vision was reduced to central focus at 3 feet, 24 hours after the onset of pronounced visual loss. The retinal vessels showed some flow of blood, but there was beginning retinal edema. Treatment with nitroglycerin, nicotinic acid, heparin, coumarin, stellate ganglion block and paracentesis of the anterior chamber was ineffectual. On the third day an intravenous infusion of plasmin was started, 50,000 units per hour for six hours. The patient noted improvement in 90 minutes and had visual acuity of 20/200 within 24 hours. Three months later visual acuity was 20/40. In a personal communication one of these investigators told of seeing remarkable improvement in four of sixteen patients treated. Emphasis is properly placed on treatment immediately after the onset of symptoms, if possible, and on the use of anticoagulants to prevent recurrence if lysis of the clot does take place.

Diabetic retinopathy has been included here, not because of striking new therapeutic measures, but because any progress in controlling this "frightful" complication of the prolonged life of diabetic persons[15] should be explored. Vannus[27] and coworkers described the procedure of hypophysectomy by a frontal-temporal approach in ten patients with labile diabetes, nine of whom had retinal disease. In eight cases one optic nerve was sacrificed to facilitate the surgical procedure, since vision was considered hopeless in that organ.

Five patients subsequently had some loss of temporal vision from nerve damage, but in general there was improvement in the ocular fundus findings. Dilatation of the veins and capillaries seemed to regress, hemorrhages and exudates diminished and absorbed and proliferative changes seemed inactive. Dr. Francis Sangali, reporting at the conference on diabetic retinopathy in Haddenfeld, New Jersey, in May 1960, said that up to that time 18 patients had been "irradiated" by the 184-inch cyclotron at the Donner Laboratory of the University of California in Berkeley. Alpha particles obtained from helium gas are accelerated by the cyclotron and aimed with precision at the pituitary gland. A rotator is used that keeps the patient's head revolving during the treatment, thus permitting the full dose to be delivered to the center of the gland without endangering surrounding structures such as the oculo-motor nerves. It has been found that any dosage above 19,000 to 21,000 rads causes hypophysectomy or at least pituitary suppression for from ten days to three months. Of the 18 patients two had striking improvement, two had satisfactory improvement, two had neither improvement nor further deterioration and three showed continued progress of retinopathy. Nine patients were not observed long enough or continuously enough for evaluation.

One consistent observation was that the insulin requirement was diminished, although this improvement was tempered by the necessity of replacement treatment with hydroxycortisone and thyroid extract, which again elevated the insulin requirement to some extent. Also the diabetes sometimes becomes more "brittle."

Increased renal damage was apparently not noted in this group of patients, but Dr. Laurance Kinsell, present at the same conference, was of the opinion that hypophysectomy does not alter progressive renal disease. Maumenee,[16] also present at the Haddenfeld conference, said in a personal communication later that he believed, since diabetic retinopathy improves spontaneously in many instances, a very carefully controlled series of cases should be studied before hypophysectomy can be recommended.

The importance of the pituitary gland to ophthalmologists is becoming increasingly evident in other areas. Its close relationship to thyroid disease was emphasized by Mulvaney[20] in 1944, although more recent work, particularly by Smelser[23] and coworkers, has indicated a trend away from a sharp division into thyrotoxic and thyrotropic types. The interrelation of the anterior pituitary factor, the orbital changes in exophthalmos and the thyroid gland calls attention to the controlling mechanism of the hypophyseal secretion. It has been established that gonadotropins and adrenocorticotropic hormone are regulated by a mechanism which involves the hypothalamus. An equivalent mechanism may be present in relation to the thyroid gland. In other words, the level of thyroid activity may be controlled by a mechanism in which the concentration of thyroid hormone determines the rate of release of thyroid stimulating hormone from the pituitary gland by its action on hypothalamic centers. In addition to the concept that in cases of thyrotoxicosis with exophthalmos there is a long-acting thyroid stimulator (LATS) which is not present in hypothyroid or euthyroid patients, Dobyns and Steelman[5] observed in 1945 that we must recognize an exophthalmos producing substance (EPS) as distinct from thyroid-stimulating hormone, although Smelser said that present methods have not produced EPS in pure form. Vail[26] termed this the "battle of the fishes," since much of the experimental work was done in minnows (Fundulus) and goldfish (Carossius).

One facet has emerged from these researches which seems better recognized in the laboratory than in the clinic. ACTH and corticosteroids may act in conjunction with TSH to potentiate exophthalmos. In a recent publication the use of these preparations in large amounts was advocated by an ophthalmic surgeon, and, as mentioned by Vail,[26] clinical improvement may follow—but also increased exophthalmos may be the result. Until the complexities of endocrine exophthalmos are better understood, such recommendations should be received with some skepticism.

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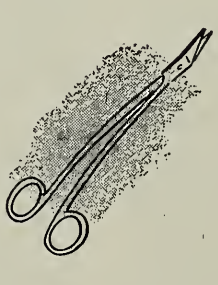

Pulmonary Inflammatory Hyperinflation in Infants

J. S. VAUDAGNA, M.D., and F. VOLPE, M.D., San Jose

• In infants less than 3 years old pulmonary hyperinflation can be a clinical and radiological sign of acute pneumonitis. It is an early, nonspecific occurrence in the presence of inflammation. The most reliable radiologic signs include flattening and undulation of the diaphragm, mediastinal elongation and narrowing, and a cardiac outline completely visualized above the diaphragm.

Patients less than three years of age respond to pneumonitis of almost any type, at least initially, by acute, diffuse respiratory tract hyperinflation. This diffuse reaction is characterized by obstructive changes occurring between the alveoli and the terminal bronchioles.[1,2,4,7]

There are certain roentgenographic manifestations of the condition.

The cause of overexpansion of the lungs—also called acute emphysema, hyperaeration, acute airway obstruction and diffuse air-trapping—is not understood completely. Owing to the small size of terminal bronchioles in infants (Figure 1) they can become compromised easily. With inflammation there is bronchial spasm, accumulation of mucus and exudate, and edema and infiltration of interstitial tissues which decrease airway patency. Since bronchioles enlarge with inspiration and narrow with expiration[5] a mechanism for air-trapping exists. Inspiration superimposed on previous incomplete expiration adds to the state of excess inflation.[4] McLean[6] described a mechanism of microemphysema due to multiple focal complete bronchiole obstruction, with aeration provided by adjacent alveolar units via the pores of Cohn. All the foregoing factors may contribute to the production of hyperinflation.

CLINICAL FEATURES

Hyperinflation may occur with upper or lower respiratory tract disease either acutely or chronically (Table 1). Classically, upper tract disease manifests itself primarily by inspiratory difficulty,[2] and lower tract disease primarily by expiratory difficulty. Except for this distinction clinical findings can be quite nonspecific in either category, particularly in obstruction so severe that very little air is exchanged.

The clinical manifestations of acute lower inflammatory hyperinflation include tachypnea, prolonged expiration, expiratory grunting, wheezing, subcostal retractions and any combination of auscultatory sounds. These findings occur early, represent a diffuse reaction and are seen in almost all cases in infants under 24 months of age. There is a decreasing incidence up to approximately 36 months.

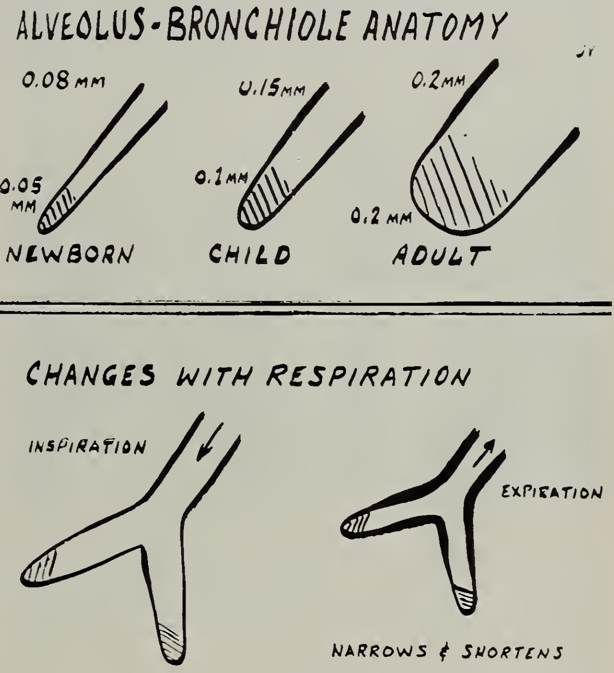

Figure 1.—Diagrammatic representation of the alveolus (shaded area) and the terminal bronchiole in different age groups. Inspiratory widening and expiratory narrowing are depicted.

TABLE 1.—*Inflammatory Obstruction*

Upper Respiratory Tract	Lower Respiratory Tract
Acute	Acute
Epiglottitis	Hyperinflation of acute pneumonias
Croup	
Foreign body	
Abscess	
Chronic	Chronic
Polio	Asthma
Foreign body	Bronchiectasis
Abscess	Et al.
Tumor	
Anomaly	

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TABLE 2.—*Radiologic Signs of Hyperinflation*

Reliable Signs	Less Reliable Signs
Flattened diaphragm	Hyperlucent lungs
Undulation or ripple of diaphragm	Bulging interspaces
Narrow and elongated mediastinum	A-P chest diameter
High perched position of heart	Lack of tracheal kinking
Upper airway must be open	No apparent thymus
	Depressed liver and spleen
	A-P angle of ribs

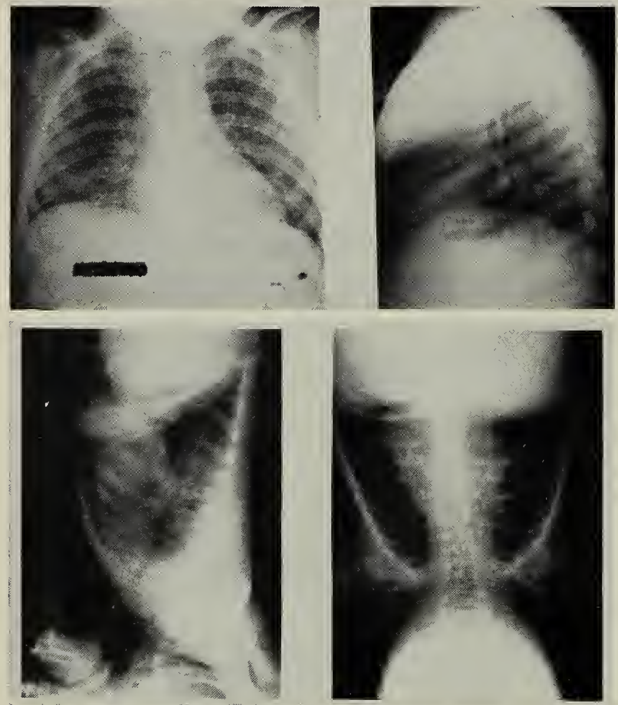

Figure 2.—*Above,* normal chest films in case of asymptomatic child. Note the round and smooth form of the diaphragm in both views. The lower cardiac outline is hidden by the high diaphragm. *Below,* the diaphragm is flattened and uneven. The lateral film demonstrates a normal epiglottis and larynx.

The patient was a 6-months-old boy with fever, rales, coarse breath sounds and severe expiratory wheezing.

RADIOLOGICAL EXAMINATION

Upright frontal and lateral films are obtained routinely. When this is not possible two frontal films are taken. For a valid diagnosis two films taken at the same examination should reveal the signs of hyperinflation.

An appropriate lateral chest film includes the epiglottis and larynx (Figure 2). This is helpful in ruling out upper tract abnormality which may cause roentgenographic manifestations similar to those of lower tract disease.

Changes in the diaphragm and mediastinum are the best radiographic signs (Table 2). Flattening of the diaphragm is seen best on the lateral film.

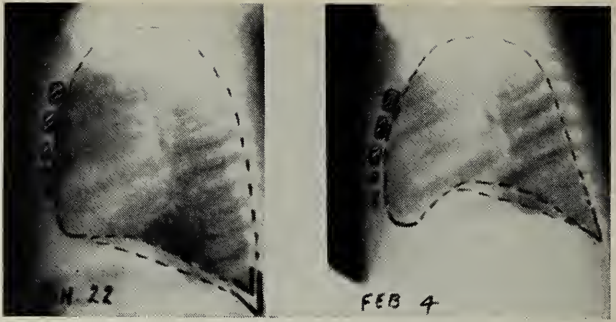

Figure 3.—*Left,* the diaphragm is depressed and uneven on this film of a girl 26 months of age who had fever, prolonged expiration and expiratory grunting. *Right,* films of same infant two weeks later when clinically normal. Note the high, smoothly arched diaphragm.

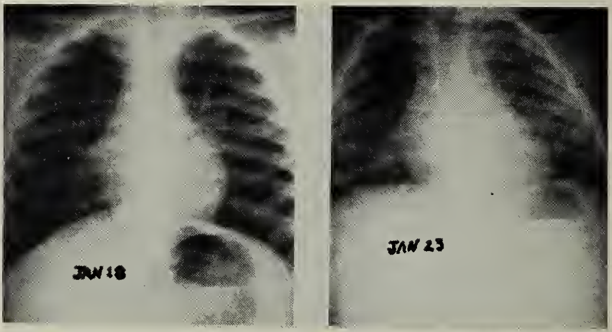

Figure 4.—Film at left taken in case of a 24-month-old boy with cough, tachypnea and severe expiratory distress with wheezing and grunting. The slightly lordotic film shows diaphragm depression with rippling on the right. The heart is perched high. *Right,* film of same patient five days later when clinically normal.

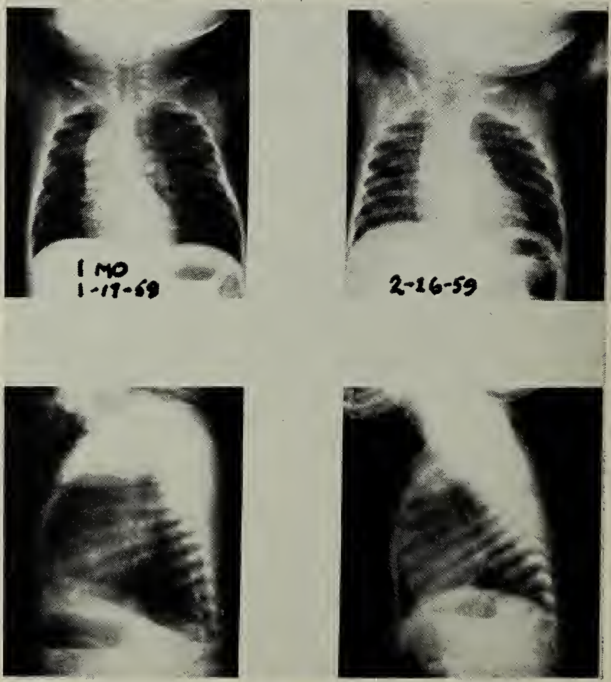

Figure 5.—Two films at left are of a 1-month-old girl with rapid, noisy breathing and expiratory grunting. Note the flattened diaphragm and narrowed mediastinum. At right, films of same infant four weeks later when asymptomatic. The mediastinum is wider and the diaphragmatic curvature is normal.

Hyperinflation is suspected when the costophrenic angle is not parallel with the sternophrenic attachment and when undulation or rippling (Figures 2 and 4) replaces the smoothly rounded form of a normal diaphragm. On the frontal view, undulation most often involves the right hemidiaphragm.

Elongation and narrowing of the mediastinum results from the stretching of the structures by the increase in vertical chest diameter and from compression of the same tissues by the overinflated lungs. In such a situation the thymus is inconspicuous and the heart appears high atop the depressed diaphragm (Figure 2).

Certain other signs are less reliable. Although some investigators have reported[8] bulging interspaces, the phenomenon is rarely seen. Hyperlucency of the lungs is a function of technique. The other listed signs are helpful, but variable. The level of the diaphragm (frontal view) can be misleading, but in general hyperinflation should be suspected if the level is below the sixth rib anteriorly and the ninth rib posteriorly.

Hyperinflation is found early in the disease process and may be the only finding (Figures 4A and 5A). In the course of time the lungs may show hyperinflation with accentuation of perihilar interstitial markings or with focal consolidation. Thereafter hyperinflation usually diminishes, sometimes despite a persistence or even an increase in parenchymal infiltrations.

Of 100 consecutive chest films taken at Santa Clara County Hospital in cases of infants with respiratory distress as a chief complaint, 80 showed hyperinfiltration. Pulmonary infiltrate of some type was seen in 45 of the 80, and in the remaining 35 hyperinflation only was noted. Of the 20 films not showing hyperinflation, ten were considered normal and ten showed focal or diffuse consolidations.

Often in cases of hyperinflation the liver and spleen are palpable at lower than normal positions owing to the depression of the diaphragm. A disproportionately low liver edge in the presence of a large heart should lead to a consideration of cardiac failure.

DIFFERENTIAL DIAGNOSIS

Inflammatory hyperinflation of the lower respiratory tract has been observed in cases of acute pneumonia due to pneumococcus, streptococcus, staphylococcus, H. influenza, pertussis, measles, interstitial pneumonia, aspiration syndrome, congenital pneumonia and acute bronchiolitis. It has been seen during the acute phases of chronic recurrent pneumonia in infants with cystic fibrosis, in hypogammaglobulinemia, in milk allergy syndrome, in lipoid pneumonia, in tracheo-esophageal fistula and in other similar respiratory problems.

Hyperinflation has not been observed in uncomplicated cases of hyaline membrane disease, since complete obstruction in the pre-alveolar area causes resorption atelectasis with decreased lung volume. Records of the cases of seven patients less than 36 months who had miliary tuberculosis were reviewed and in none of them was there evidence of overexpansion of the lungs.

Some investigators[3] have reported hyperinflation concomitant with cardiac septal defects, but have noted that superimposed infection may have been the cause.

In a few cases radiographic findings similar to those of hyperinflation have been noted in infants with acidosis, dehydration and hypovolemia.

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CASE REPORTS

Recurrent Parotitis with Sialoangiectasis

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Chronic recurrent parotitis is reported with increasing frequency in children and young adults. Often it is generalized throughout the gland and it may be unilateral or bilateral. Usually sialoadenitis (and rarely fistula formation) is present. Recurrent parotitis in most cases is associated with sialoangiectatic changes. Duct or alveolar ectasia may result from acquired blockage[5] due to calculus or inflammatory changes; but the ectasia may also be due to a congenital developmental structural deformity antedating the manifestation of sialoadenitis. Since infection may complicate congenital sialoangiectasis, it is often impossible to differentiate between primary and secondary disease.

Sialoangiography is an excellent method of demonstrating sialoangiectasis, and correlation with histologic findings is sometimes possible. As excision of a biopsy specimen of the parotid gland may be a hazardous procedure, it is justifiable only if the information anticipated is important enough to outweigh the danger of damage to the facial nerve.

The author had opportunity to consider the relationship of ectasia to recurrent infection in the course of treating siblings who had chronic recurrent parotitis and sialoangiectasis. The patients were two sisters, in each of whom symptoms of recurrent parotitis with sialoangiectasis developed at the age of 17. One of them had bilateral disease although the symptoms were unilateral.

REPORT OF CASES

Case 1. A 21-year-old white married woman was first observed June 14, 1961, with a history of recurrent swelling in the right preauricular area for over three years. The swelling would persist for one to three days and could be relieved by exerting pressure over the parotid gland. At the onset, attacks occurred at intervals of two to four months, but they had progressively increased in frequency until at the time the patient was seen by the author they

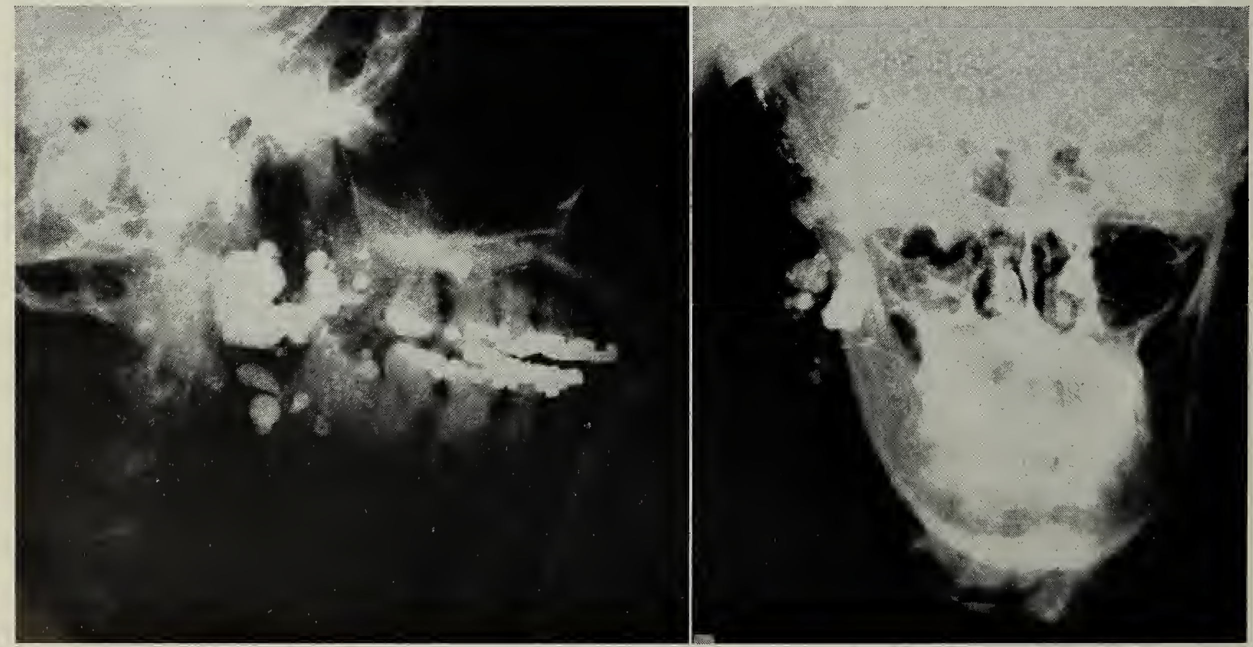

Figure 1.—(Case 1)—Sialoangiogram of the right parotid area showing extreme and extensive sialoangiectasis of the right parotid gland with saccular dilatation of acini as large as 1.5 cm. in diameter. The duct does not appear distended, nor is there any evidence of ductile obstruction. These changes are characteristic of chronic parotitis with pronounced saccular dilatations of acini elements, compatible with congenital sialoangiectasis.

Submitted May 31, 1962.

were occurring every two to three weeks. An x-ray of the parotid area a year previously had not shown any calculus or radiopaque material in the parotid area.

There was no history of any previous illness. Tonsilloadenoidectomy at the age of three was the only surgical treatment she had undergone. Specifically there was no history of any swelling or soreness of the left parotid gland. The patient was four months pregnant when first seen.

Extensive questioning about family history of symptoms referable to the parotid area elicited a report of swelling of the face in the patient's sister (Case 2, hereafter reported).

Upon physical examination the only positive significant finding was tender diffuse right preauricular swelling over an area some three or four centimeters in diameter with involvement of the right parotid gland. Light pressure on the enlarged gland expressed a sero-purulent discharge from the right Stensen's duct. Probing of the duct facilitated milking of the gland. Sialoangiography showed extreme and extensive sialoangiectasis of the right parotid (Figure 1). During the next four weeks, the patient had two additional attacks of purulent sialoadenitis.

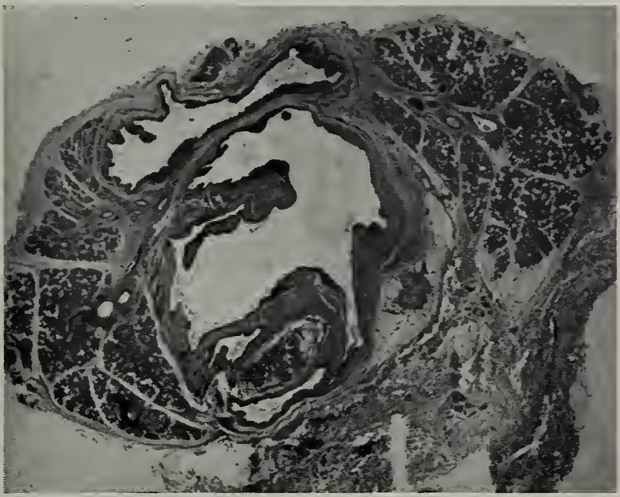

Figure 2.—(Case 1)—Portion of salivary gland showing ductal ectasia (×5).

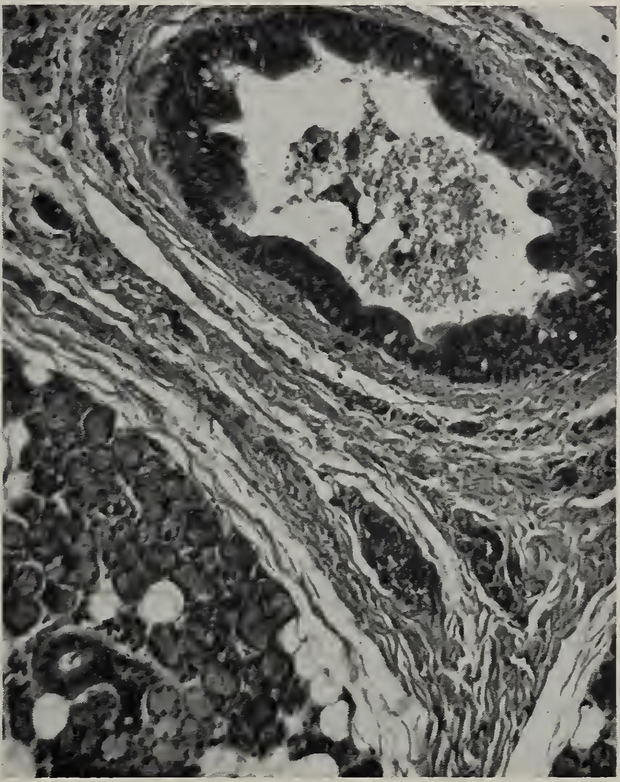

Figure 3.—(Case 1)—Salivary gland with ductal epithelium intact but showing some "piling up" of the cells (×200).

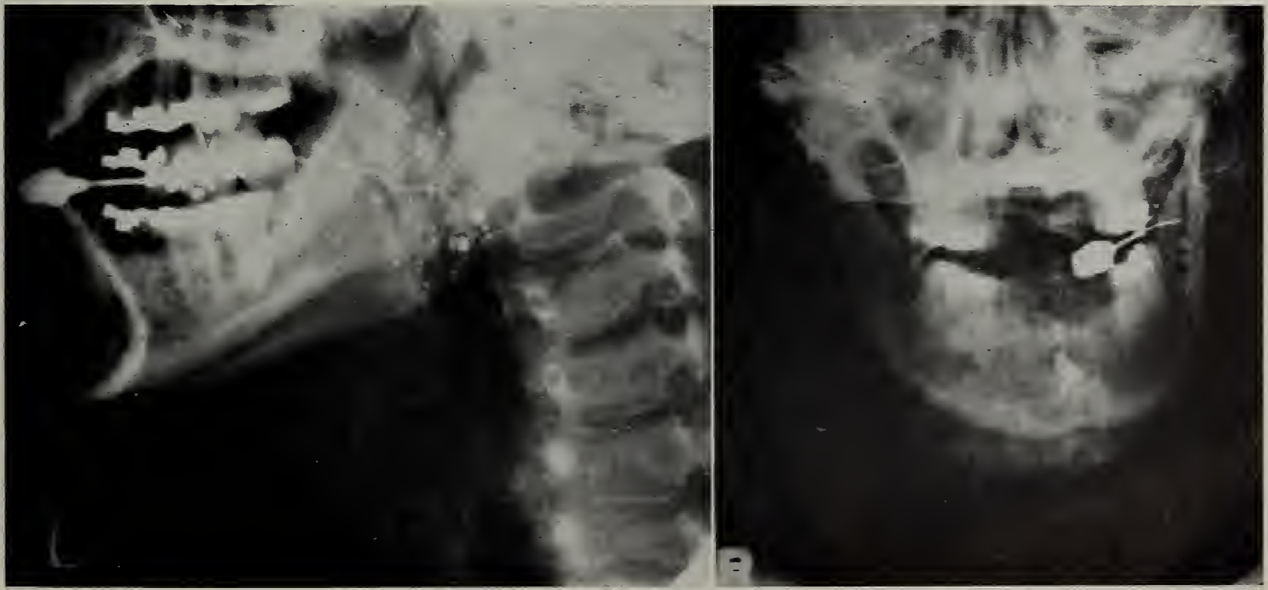

Figure 4.—(Case 1)—Sialoangiogram of left parotid area, showing sialoangiectatic changes with saccular dilatations adjacent to the non-dilated ducts throughout the parenchyma of the gland.

Because of the obvious irreversibility of the pathologic process and the increasing frequency of attacks, it was decided that operation should be done before the third trimester of pregnancy. Total parotidectomy with preservation of the facial nerve was carried out. The glandular tissue was nodular with a multitude of cysts on the surface as well as throughout the parenchyma.

Upon microscopic examination pronounced dilatation of the duct system, extending to the finest radicals, was noted. The findings were typical of sialoangiectasis and chronic sialoadenitis. (See Figures 2 and 3.)

The postoperative course was completely without complication. Following normal termination of the patient's pregnancy, sialoangiographic studies of the left parotid gland were made. Although no history of left parotid swelling could be elicited, studies demonstrated extensive sialoangiectatic changes with saccular dilatations of ducts and in the parenchyma adjacent to ducts in the left parotid gland (Figure 4).

Case 2. The patient, a 20-year-old white woman, a sister of the patient of Case 1, was first observed June 14, 1961, with a history of cystic swelling behind and below the left ear for over two and a half years. During that time incision and drainage had been carried out more than six times, with release of bloody purulent discharge.

The patient was asked about but could not recall any swelling of the preauricular areas of either side. She had had tonsilloadenoidectomy at age 2.

Upon physical examination an inflamed cystic lesion 2 cm. in diameter behind and below the left ear was observed.

A sialoangiogram (Figure 5) showed the parotid duct posteriorly entered a dilated structure below and behind the left ear. There were dilated structures along the superior and medial aspects of the cystic structure as well as small but discrete sacculations along the duct ramifications, with no dilatation of the duct. The findings were consistent with sialoangiectasis and fistula formation.

Left total parotidectomy was carried out. The postauricular cyst and fistula were excised en masse and the facial nerve was preserved. The pathologic diagnosis was sialoangiectasis with abscess formation and chronic sialoadenitis.

The patient recovered without complication. No evidence of sialoangiectasis was observed later in a sialoangiogram of the right parotid gland.

COMMENT

In reports dealing with pathogenesis of sialoangiectasis of the parotid gland, the importance of recurrent infection has been stressed. Pathologic studies done by Jones[3] convinced him that dilatation of the finer ducts led to stagnation of secretion, which favored development of infection. Fifteen cases of sialoangiectasis, five of which were bilateral, were reviewed by Bisgard and co-workers.[2] In that series there was no obstruction to any part of Stensen's duct, ruling out dilatation of the duct being secondary to ductile obstruction. Perzik[6] demonstrated that changes in chronic parotitis associated with fistulae, sialoadenitis and sialoangiectasis are similar, since all are due to duct and glandular alterations, the main variation being one of degree. He observed that duct blockage, a complicating factor in practically all inflammatory processes, may be partial or complete, intermittent or continuous.

Planka,[7] in an exhaustive review of the literature, showed sialoadenitis to be a definite clinical and pathologic entity of the newborn, as well as of nurslings and very young children.

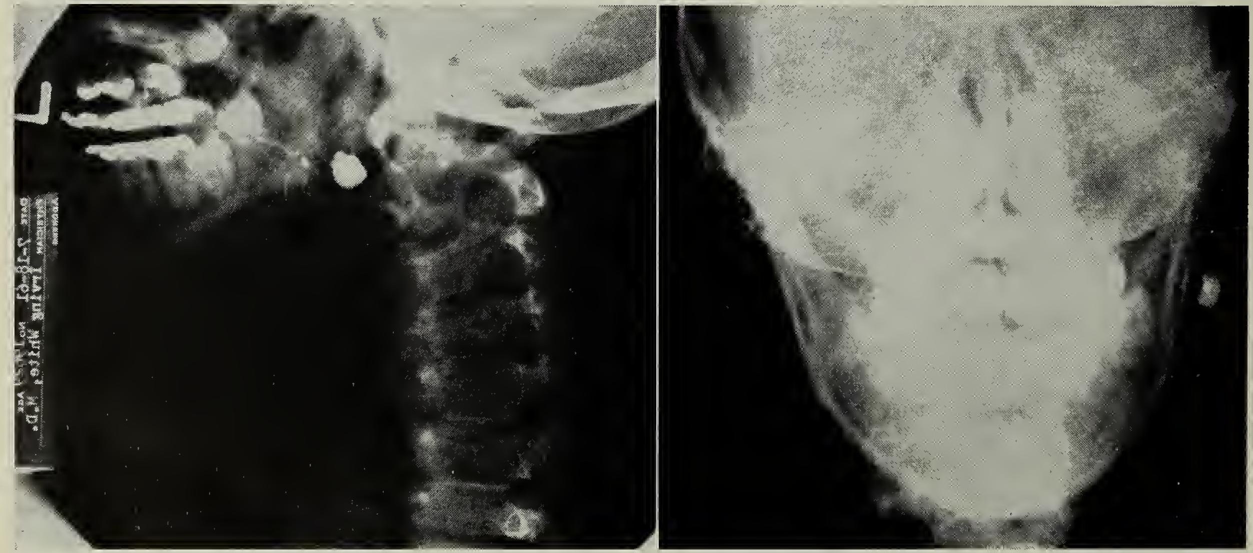

Figure 5.—(Case 2)—Sialoangiogram of the left parotid area, showing the opaque medium passing through Stensen's duct posteriorly to enter the dilated fistulous cyst. There are small but discrete dilated sacculations along the duct and adjacent to the cystic structure, but no dilatations of the duct.

Krepler[4] reported the case of a 2-year-old boy who at the time of a primary attack of pyogenic parotitis was shown by sialoangiography to have ectasia of the duct on the diseased side and small alveolar dilatation on the clinically normal side. Kepler also presented summaries of cases of a 5-year-old boy and a 16-month-old girl, each of whom had unilateral acute sialoadenitis for the first time. In those cases sialoangiography within four weeks after the attacks demonstrated sialoangiectatic changes in both sides. Krepler expressed belief that the fact that sialoangiectasis is demonstrable early in the course of recurrent sialoadenitis, often with the first attack, coupled with the young age of these patients, supports the postulation that congenital abnormalities are predisposing factors. It was on the basis of sialoangiographic pictures that he proposed the term *congenital sialoangiectasis of the parotid.*

Jones[3] reviewed 20 cases of recurrent parotitis in childhood, including cases in which the mother of two siblings with recurrent parotitis had had recurrent parotitis as a child.

Becker and co-workers[1] observed that in most cases of chronic parotitis sialoangiograms show saccular dilatation of ducts throughout the whole parotid gland, and that ectasia is always demontrable in both parotids even though the clinical disease may be confined to one.

If the pathologic processes are severe enough to warrant, total parotidectomy with preservation of the facial nerve offers an excellent form of management of sialoangiectasis and sialoadenitis.

SUMMARY

A clinical review of two sisters who had recurrent parotitis with sialoangiectasis is presented with a correlation of sialoangiographic studies and histopathologic findings. One of the patients had fistula formation behind and below the ear as a complication of the disease. In one of the two cases sialoangiographic studies showed typical pathologic changes on both sides although clinically the disease was unilateral.

The etiologic interrelationship of recurrent parotitis and sialoangiectasis is discussed. The evidence supports the presumption that congenital sialoangiectasis may be a basic underlying factor in many cases of recurrent parotitis.

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The Mongolism-Leukemia Syndrome

Report of a Case

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A NINE-MONTH-OLD NEGRO BOY was admitted to hospital because of severe anemia. The obstetrical record showed that he had been born after 38 weeks of gestation. At birth he weighed 5 pounds 1¾ ounces, was 17¾ inches long and was cyanotic and responded sluggishly. He was considered to be borderline premature. By the ninth postpartum day the infant had intense jaundice and the liver and spleen were enlarged. Total serum bilirubin reached a maximum of 15.5 mg. per 100 cc. (direct, 7.8 mg. per 100 cc.) by the twentieth postpartum day. During this same period the hemoglobin dropped from 11.5 gm. to 8.0 gm. per 100 cc. A battery of laboratory tests were done in an attempt to determine the cause of the jaundice. Among those with negative result were: Coombs test (direct and indirect), serial blood cultures, liver function tests including cholesterol determination, cephalin flocculation and thymol turbidity. Preparations for demonstration of sickle cells (sodium bisulfite method) were strongly positive on four occasions. A discharge diagnosis of sickle cell anemia with crisis was made. In the ensuing months, after discharge, the child was seen for infant diarrhea and for upper respiratory infection. No additional icteric episodes were observed, although sickle cell preparations were consistently positive.

When admitted again at nine months of age, the child was noted to be decidedly anemic and a mongoloid diathesis was apparent: Slight slanting of the eyes, flattened palpebral fissures with prominent epicanthal folds, bradycephalic head and large deposits of fat in the cheeks. There was a moderate disproportion in the size of the upper and lower jaw. The mouth was small, the tongue large and protruding. Hypoplasia of the phalangeal bone caused shortening of the fourth finger. The palm was square and across it was a single crease running parallel to the line of insertion of the fingers. The entire body musculature was hypotonic and all joints were easily hyper-extendable.

At this time the sclerae were clinically icteric and the liver and spleen were palpable. Hemoglobin con-

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Submitted August 8, 1962.

From the Department of Pathology, University of Southern California School of Medicine, Los Angeles 33.

tent was 8.4 gm. per 100 cc. and the hematocrit was 23 per cent. Bilirubin (direct) was 0.89 mg. per 100 cc. and the total 1.2 mg. per 100 cc. Leukocytes numbered 8,650 per cu. mm. of peripheral blood, 50 per cent of them blast forms. A tibial bone marrow preparation showed pronounced depression of the normal elements of erythropoiesis and myelopoiesis and a replacement by mononuclear large cells having coarse chromatin and prominent nucleoli. Upon microscopic study of the marrow it was noted that the normal marrow was almost completely replaced by diffuse masses of anaplastic cells resembling undifferentiated mesenchyme. A diagnosis of acute stem cell leukemia was made. In sickle cell preparations 40 to 50 per cent of the red cells showed sickling. Unfortunately, electrophoretic demonstration of S-hemoglobin was not attempted either at birth or in the immediate postpartum period. The child was given supportive therapy but died ten days after admission.

At necropsy obvious signs of mongolism were noted. The heart was dilated but was free of congenital abnormalities. The lungs were consolidated and showed yellowish-amber streaks of infiltrating leukemic cells (microscopically confirmed). Prominence of all normal lymphoid aggregates within the bowel wall and lymph nodes within the mesentery were noted. The thymus was enlarged, as were all lymph node groups, including massive enlargement and confluence of the cervical chains and of perihilar mediastinal groups. The spleen weighed 15.0 gm. and on examination of cut section enlargement of the Malpighian corpuscles was observed. The liver likewise showed enlargement and yellowish streaks of supposed infiltrating leukemic elements. Lipid exhaustion with reduction in size of the adrenal glands was noted. The kidneys were swollen. Massive infiltration of leukemic elements obliterated the morphologic features of sections of these organs.

Microscopic examination of the lymph nodes, spleen and thymus revealed decided architectural alteration due to the leukemic cell infiltrate. The spleen further showed sickling of red cells within the sinusoids and penicilliary vessels of the pulp. The spleen also showed fibrotic nodules with numerous enmeshed hemosiderin-laden macrophages, evidence of massive past parenchymatous hemorrhage, this being characteristic of sickle cell disease.

An examination of the myocardium, pulmonary parenchyma, kidneys and adrenal glands (see Figures 1, 2 and 3) revealed massive infiltration by large mononuclear leukemic cells. Within the hepatic sinusoids were clumps of leukemic cells and also easily discernible sickling of the red cells. Within the sternal bone marrow a rather severe alteration of architecture with suppression of normal hematopoiesis was evident. The prominent cell type was a large mononuclear cell with a hyperchromatic nucleus showing several prominent nucleoli. These elements were considered to be stem cells, with a suggestion of lymphocytic orientation in the occa-

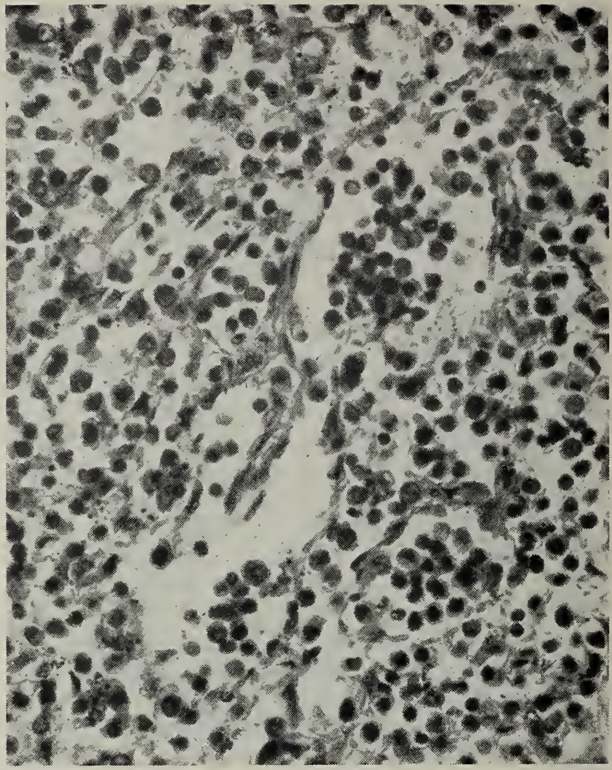

Figure 1.—Sections of spleen (27× magnification) reveal a rather massive infiltration of the red pulp sinusoids and associated vascular channels by large mononuclear cells showing prominent nucleoli. These same cells are seen in rather large numbers throughout the parenchyma. Within some of these spaces there is a tendency toward sickling of the red cells.

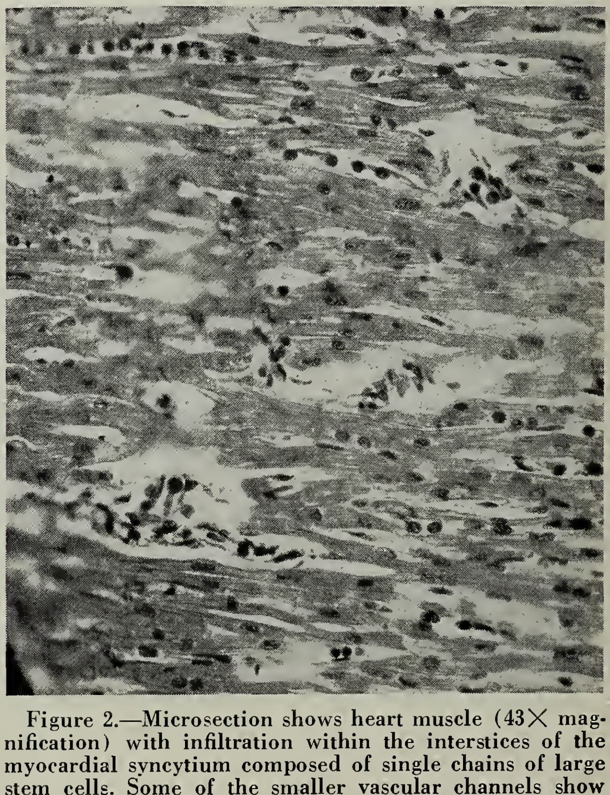

Figure 2.—Microsection shows heart muscle (43× magnification) with infiltration within the interstices of the myocardial syncytium composed of single chains of large stem cells. Some of the smaller vascular channels show these same cells totally filling the vascular space.

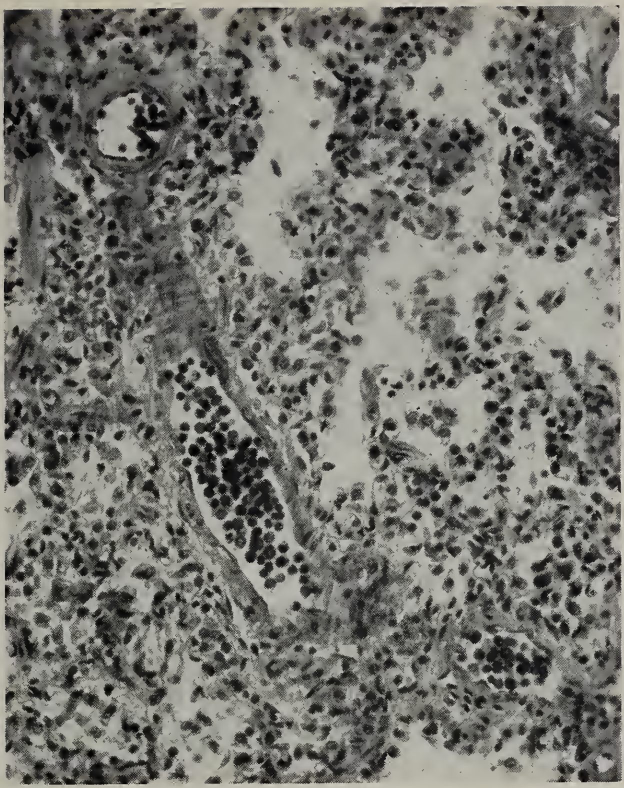

Figure 3.—Microsection (43× magnification) showing lung parenchyma with a rather dense infiltration of the alveolar septa by large mononuclear cells of the stem cell leukemic type. The vascular channels within this area of lung parenchyma reveal almost total filling of the vascular space by stem cells.

sional group in which maturing forms were identified.

Death was ascribed to interstitial pneumonitis as a terminal episode superimposed on stem cell leukemia with extensive involvement of all organs. Other conditions included were mongolism and sickle cell disease.

DISCUSSION

The simultaneous occurrence of mongolism and leukemia[4] cannot be explained by chance alone. The clinical rarity of this combination and the high statistical significance[3,9,10] of such a. relationship emphasize the desirability for reporting all cases. The first case reported of this apparent relationship was by Brewster and Cannon[3] in 1930. More recently, Krivit and Good[9] have added five cases and coined the rather descriptive *mongolism-leukemia syndrome.* Additional cases have been reported by Merrit and Harris,[13] Sutow and Welsh[19] and Lee and Cinar.[10] The causes of acute leukemia and of mongolism are unknown, although recent chromosomal studies strongly suggest a cause of mongolism.

Sickle cell anemia has been recognized as a specific entity since 1910, when it was described by Herrick.[6] The disease has been extensively studied and is considered to be a hereditary, familial, acute and chronic hemolytic anemia occurring predominantly in the Negro race. Sickle cell trait and anemia are inherited as a Mendelian dominant and therefore presumably are present from the onset of fetal hematopoiesis. The lack of reported instances of intrauterine hemolytic crisis attributed to sickle cell disease suggests the presence of some mechanism of protection. Watson and coworkers[21] suggested that the protective mechanism is related to the fetal hemoglobin predominance during the intrauterine and early postpartum periods. In Watson's study only 6 per cent of the infants showed sickling at birth, with a gradual increase to 90 per cent by four and a half months of age. This increase follows closely the decreasing concentration of fetal hemoglobin and supports the theory of a protective mechanism. Among the 6 per cent who show sickling at birth, few show more than 0.5 to 29.5 per cent of their red cells developing the abnormal configuration.

McGavack and Nussbaum[12] further reported on a study of 214 patients, 50 per cent of whom showed sickling of cells before two years of age but very few before the age of six months. Graham and McCarty[5] reported the autopsy of a four-month-old Negro infant who died of bronchopneumonia and in whose spleen were said to be characteristics typical of sickle cell disease.

The important contribution of Pauling and coworkers[15] placed sickle cell anemia in the unique position of being due to a molecular aberration of hemoglobin. More recently, Ingram[8] discovered that the abnormality of hemoglobin in sickle cell disease consists only in the replacement of one glutamic acid residue by valine in the hemoglobin molecule.

The sequence of apparent congenital sickle cell anemia, with its established hereditary basis, and the subsequent development of the so-called mongolism-leukemia syndrome, with its chromosomal patho-etiologic relationship, is an interesting one. In a five-year period at Los Angeles County General Hospital there were 21 new cases of mongolism, none of them complicated by leukemia. During the same period there were 15 cases of sickle cell disease diagnosed, none of them in patients under four months of age. None of these cases was complicated by the other two diagnoses under discussion.

The author has seen two additional examples of acute leukemia developing in mongoloids. However, clinical and pathological data adequate to permit including them in this report were lacking.

SUMMARY

An instance of mongolism with the subsequent development of acute stem cell leukemia is presented. This is further complicated, shortly after birth, by sickle cell disease with crisis. The statistically significant elevated incidence of leukemia in mongolism is pointed out.

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Simultaneous Bilateral Spontaneous Pneumothorax

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SPONTANEOUS PNEUMOTHORAX is now a rather common and well understood lesion. It took a long time for clear ideas as to etiology and therapy to emerge. In the hundred years from 1803 to 1903 more than three hundred and fifty articles appeared in the medical literature,[10] and as late as 1931 Palmer and Aaft expressed belief that 80 to 90 per cent of all cases of pneumothorax were caused by tuberculosis.[10] Probably for this reason conservative therapy was the rule. It is still widely used.

About thirty years ago, it began to be recognized that tuberculosis is rarely the cause of spontaneous pneumothorax, and today it is known that in most cases it is secondary to rupture of emphysematous blebs or bullae. Concomitantly, and particularly during the last decade, aggressive surgical treatment has come to be generally accepted as the method of choice for spontaneous pneumothorax of more than minimal degree.

For bilateral spontaneous pneumothorax, prompt surgical intervention (usually closed intercostal drainage) is not only the preferred therapy but often is mandatory. The condition is relatively rare: Adler and coworkers[2] noted that in only five of 95 cases of spontaneous pneumothorax were both sides involved simultaneously. Driscoll and coworkers[5] reported bilateral involvement in two of 56 patients who received surgical therapy for spontaneous pneumothorax. Kraeft[9] reported one case in a series of 32 patients, and Hecker and associates[6] one case in a series of 39. Aust[3] reported 44 cases of spontaneous pneumothorax with only one of the patients having "a history of bilateral pneumothorax" (presumably not simultaneous). In the same communication he also made the remarkably inaccurate statement that "while one-sided pneumothorax is readily tolerated, bilateral pneumothorax is universally fatal." Hyde[8] reported two patients with simultaneous bilateral pneumothorax in a series of 200 cases of benign spontaneous pneumothorax.

Reports of cases of simultaneous bilateral spontaneous pneumothorax are, not surprisingly, infrequent. Reeves and coworkers[11] reported the case of a man 66 years of age in whom simultaneous bilateral pneumothorax was treated sucessfully with emergency simultaneous resection of the involved pulmonary segments. Heichman and associates[7] described the case of a boy of 16 years in whom bilateral pneumothorax and spontaneous mediastinal emphysema occurred as complications of bronchopneumonia. The pneumothorax was treated by bilateral withdrawal of air from the pleural cavities with a needle and relief followed immediately. Adkins and Smyth[1] observed a 22-year-old man with recurrent simultaneous bilateral pneumothorax six months after a similar condition had been relieved by aspiration. Bilateral anterior thoracotomy was performed, with resection of blebs and talc poudrage. The patient made a complete recovery.

Because recurrence is common in spontaneous

Submitted August 22, 1962.

pneumothorax, many attempts have been made to prevent it. Probably the commonest and most successful method is abrasion of the pleural surfaces. Parietal pleurectomy is advocated by some investigators. Promotion of adhesions by instillation of irritating substances such as blood, glucose, talc and kaolin has been employed. Baronofsky[4] did bilateral thoracotomy in 26 patients, usually at one operation. In 25 of the 26, blebs were found in both lungs, and usually surgical removal of the involved areas on both sides was carried out. This is an heroic approach which probably will never be widely followed. In general all these methods have been discarded in favor of thoracotomy with definitive surgical procedure (abrasion or resection of a wedge, segment or lobe) to deal with the complications of pneumothorax, the most common of which is recurrence.

In the case of simultaneous bilateral spontaneous pneumothorax here reported, closed thoracotomy tube drainage brought about rapid and almost complete relief. There was no recurrence and no complication serious enough to warrant further intervention.

REPORT OF A CASE

The patient, a 22-year-old man employed in an automotive repair shop was first observed in the office late in the afternoon of July 28 in dramatic respiratory distress, breathing rapidly through his mouth, and barely able to talk. He had been brought from the shop by his employer. No breath sounds were audible in the right side of the chest. Coarse inspiratory and expiratory rales were audible at the left lung base. The blood pressure was 130/80 mm. of mercury and the heart rate 110. There was no pain in the chest. Spontaneous pneumothorax on the right was suspected and the patient was put in hospital at once. X-ray films of the chest showed 100 per cent pneumothorax on the right—and 30 per cent on the left.

Emergency needle aspiration of the right chest was carried out, and then closed thoracotomy tube drainage of both sides through the second intercostal space. The patient had immediate relief.

Questioned, he recalled having awakened that morning short of breath and with some "tightness" in the chest. However, he had gone to work and kept busy till 4 p.m., when the dyspnea became intolerable. There was no history of previous respiratory difficulty.

The x-ray film taken just before operation was read as: "Bilateral pneumothorax. . . . On the right the lung is compressed against the perihilar and mediastinal border. On the left, adhesions apparently keep the left lung from collapsing completely. . . . We note the presence of bilateral third degree cervical ribs." The reading of films taken the next day was as follows: "Tubes have been placed in each pleural space and there has been partial re-expansion of both lungs, the greatest degree of expansion having occurred at the left base."

The temperature rose to 103° F. on July 29 and antibiotics were prescribed. On July 30 the patient was breathing easily, although there was some pain in the right side of the chest. On August 1 the drain tubes were removed, and on August 2 an x-ray film showed: "Considerable re-expansion of the lung fields bilaterally. The right lower chest area is obliterated by a fluid density which probably represents pleural effusion." On August 4 a film of the chest was reported as showing: "Increased markings on the right which . . . probably represent an infiltration in addition to the pleural effusion. The cardiovascular silhouette . . . is markedly enlarged. This is probably due to pericardial effusion which could be the result of the sudden pressure effect on the pericardium."

Serial electrocardiograms showed only sinus tachycardia. By August 6 the temperature was normal. There were bronchial breath sounds and some crepitant rales at the right base. On August 13 an x-ray film of the chest showed: "No evident mediastinal widening or tracheal shift. When compared with the film of 8/4/61 there appears to have been partial clearing of the infiltrative process at the right base." The patient was dismissed on August 13 and returned to work on August 25.

When observed some eight months later the patient said he felt well. No abnormalities were noted on physical examination. An x-ray film was reported: "There has been definite further expansion of the atelectatic changes at the right base and further resolution of the pleural changes. The left base shows better expansion with the left diaphragm having gone down almost an interspace. The right diaphragm has descended at least half an interspace since the last examination. The cardiovascular silhouette is normal except for some evidence of tension on the pericardial border suggesting pleuropericardial adhesions. No evidence of pneumothorax is seen."

SUMMARY

Simultaneous bilateral spontaneous pneumothorax occurred in a 22-year-old man. There was some "tightness" in the chest but no real pain. The only real complaint was dyspnea, which he noticed on awakening, but did not become so severe as to prevent his working until late afternoon.

Emergency needle aspiration of the right chest, then bilateral closed thoracotomy tube drainage through the second interspaces were carried out. The tubes were removed on the fifth postoperative day.

Low grade fever persisted till the tenth postoperative day. There was moderate pericardial effusion, pleural fluid and atelectasis and probably some infiltration at the right lung base. The patient was dismissed from the hospital after 17 days and returned to work after 44 days. Serial chest x-ray

films have shown on further pneumothorax, almost complete clearing of the changes in the right lung base, reexpansion of the lungs, and absorption of the pericardial effusion.

540 North Central Avenue, Glendale 3 (Haining, R. B.).

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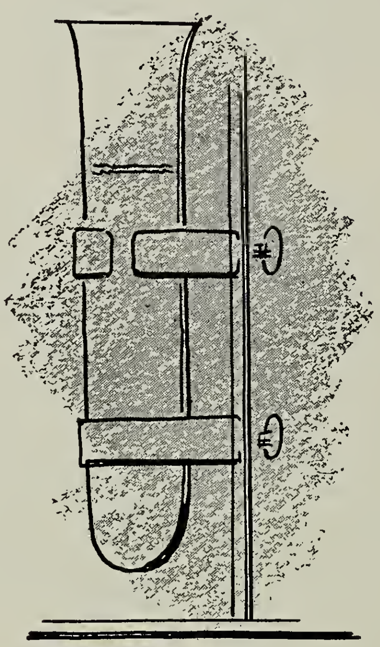

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EDITORIAL

Medical Student Loans

MEDICAL EDUCATION is expensive. This statement may be made categorically and we would be hard put to find anyone who could successfully produce valid arguments against it.

The cost, unfortunately, is one of the factors which divert from the study of medicine some of our bright young people with an interest in science but without enough money to finance their studies themselves. Consequently, in recent years we have seen many of these potential physicians diverted to studies in chemistry, engineering, physics and other "glamor" activities which are subsidized widely by government and industrial firms operating in these fields.

Expense, both in dollars and time, dictates to many of these should-be doctors a scientific course which takes them away from the humanities of science and places them in the mechanics of space, automation and other emerging scientific production. Too frequently we hear the expression, "I wanted to be a doctor but just couldn't see my way clear to finance a course in medicine."

Proof of this phenomenon was given graphically in the years immediately following World War II, when returning service men found it possible to use the GI program to enter pre-medical or medical school and to enjoy federal help in meeting their costs.

Today, with GI funds exhausted and with competing sciences offering government and commercial subsidies, applications for entrance to medical schools are declining. Medical school deans still cling to the hope that the decrease in applications may be limited to numbers only and not to quality but there remains a valid question as to whether or not intellectual quality declines along with a numerical decrease.

Every medical organization receives questions throughout the year as to the availability of funds to enable students to enter medical training. Many of these questions come from high school pupils or counselors, a smaller number from undergraduates in pre-medical schools and a few from the classes in medical schools.

Such requests from the high school level must of necessity be answered with caution, since there is as yet no demonstrated talent or aptitude for a medical career. Even if from the pre-medical school level, there remains a question as to whether or not the inquirer will do well enough to become a good candidate for medical training.

At the level of medical school itself, however, the applicant has proved his qualities to the point of acceptance as a medical student. If his course should be terminated before graduation by a lack of funds, the loss is great both to society and the individual. Often complications arise because of early marriages by students.

To provide a means for enabling students in this category to continue their studies, the American Medical Association several years ago established the American Medical Association–Education & Research Foundation. Part of the program of this organization is to raise and distribute loan funds for medical students, interns and residents.

The loan funds are advanced by a Chicago bank at low interest rates and long repayment terms. The student may borrow each year, up to a maximum of $15,000, and may have as long as ten years to repay his obligation. Applications for funds are filed through the deans of medical schools or officers of the teaching hospitals where the student is pursuing postgraduate training.

To guarantee these loans the A.M.A.-E.R.F. acts as cosigner and puts up $1 for each $12.50 loaned.

Establishment of this program has drawn an enthusiastic and immediate response from both contributors to the fund and borrowers under it. Several pharmaceutical houses have generously made contributions, some outright and some on the basis that matching funds be given by physicians and others. Physicians have been asked to contribute to the guarantee fund and have done so willingly and readily.

Private industry has already supplied $425,000 to the A.M.A.-E.R.F. fund. Other contributors have put in a little more than that amount.

On the borrowing side, more than 5,000 medical students have been granted loans, and applications are now coming in at the rate of 150 a week. Fewer than 5 per cent of applications have been declined.

This fund is now depleted to the point where more money is needed to meet the demand. Another appeal for contributions has been made to all physicians and we hope the response will be rapid and generous. Contributions may be sent to the A.M.A.-E.R.F. at 535 No. Dearborn St., Chicago 10.

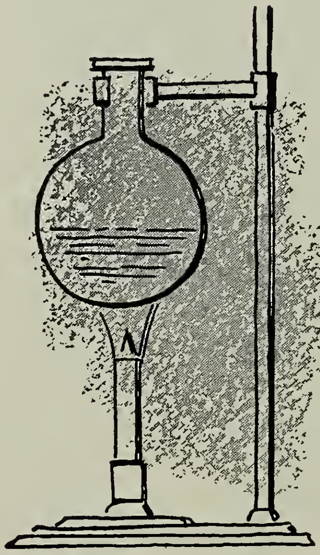
An example of what these guarantee funds means may be gained when it is shown that $1,000 in the guarantee fund today will supply credit to create one new doctor in 1970 and another each seven years thereafter—with the $1,000 still remaining in the fund through repayments.

When the loan guarantee fund reaches the optimum level it will become self-sustaining. The problem is to secure the working capital at this time to assure the availability of bank loans for the future in a volume adequate to meet the demands of our future doctors.

Loan applications have come in from nearly every medical school in the country and from more than 400 teaching hospitals in nearly every state. One out of three applications shows that the student's father is disabled, retired or deceased.

Here is a humanitarian opportunity to enable future generations of physicians to secure their training and repay the expense over a period of years after they enter practice. Here is one more chance for all physicians to give concrete support to the tradition of physicians assuring the education of their successors in the years to come.

Let us hope that this appeal will meet with great success. We owe it to those who will follow in our footsteps.



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Minutes of the 486th Meeting of the Council, San Francisco, Mark Hopkins Hotel, December 15, 1962.

The meeting was called to order by Chairman Anderson in the Peacock Court of the Mark Hopkins Hotel, San Francisco, on Saturday, December 15, 1962, at 10:00 a.m.

Roll Call:

Present were President Wheeler, President-Elect Sherman, Vice-Speaker Heron, Editor Wilbur, Secretary Hosmer and Councilors MacLaggan, Wilson, Todd, O'Neill, Bullock, O'Connor, Ham, Rogers, Dalton, Murray, Davis, Miller, Watts, Campbell, Morrison, Kaiser, Anderson, Dozier, Cosentino and Grunigen. Absent for cause, Speaker Doyle, Councilor Quinn.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Clark, Marvin, Whelan, Klutch and Tobitt, Mrs. Griffith and Doctor Miller of C.M.A. staff; Messrs. Hassard and Huber of legal counsel, Messrs. Read, Salisbury and Putnam of the Public Health League; county executives Scheuber of Alameda-Contra Costa, Field and Williams of Los Angeles, Rosenthal of Forty-First, Bannister of Orange, Brayer of Riverside, Dochtermann of Sacramento, Nute of San Diego, Neick of San Francisco, Monnich of San Joaquin, Colvin of Santa Clara, Wood of San Mateo, Grove of Monterey, Blankfort of Marin, Brown of Sonoma and Bailey of Tulare; Doctor Malcolm Merrill, State Director of Public Health; Doctor Lester McDonald, medical director of the State Department of Social Welfare; Doctor Daniel Blain, director of the State Department of Mental Hygiene; Doctor Mark Gerstle of the California Youth Authority, Messrs. Heller and Nyron of California Physicians' Service, Mr. John Pompelli of the American Medical Association; Mr. Robert Garrick; Doctors Robert Vaughan and L. J. Snyder of Fresno; Doctors J. T. Janvier and Glenn Pope of Sacramento; Doctor T. Eric Reynolds, president of California Physicians' Service; Mr. Frank R. McDougall, president of the California Hospital Association; Doctors Warren Bostick, Dan O. Kilroy, Edgar Wayburn, and others.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 485th Council meeting, held November 3, 1962, were approved.

2. *Membership:*

(a) A report of membership as of December 12, 1962, was presented and ordered filed.

(b) On motion duly made and seconded, 29 delinquent members who had cleared their delinquency were voted reinstatement.

(c) On motion duly made and seconded in each instance, eight applicants were voted Associate Membership. These were: William Francis, Elaine J. Knutsen, Theo K. Miller, Wrenshall O. Oliver, Napa County; Alexander J. Bellanca, Robert L. Neil, San Diego County; George A. Butler, Sonoma County; Ernest P. Tiangco, Ventura County.

(d) On motion duly made and seconded in each

OMER W. WHEELER, M.D.	President
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JAMES C. DOYLE, M.D.	Speaker
IVAN C. HERON, M.D.	Vice-Speaker
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instance, seven members were voted Retired Membership. These were: D. J. Manley, Alameda-Contra Costa County; William F. McColl, San Diego County; Muriel E. Edwards, Irwin C. Schumacher, San Francisco County; Claude Verner Thompson, San Joaquin County; Horace Gray, Santa Barbara County; Guy Leslie Kay, Shasta-Trinity County.

(e) On motion duly made and seconded, three members were voted reductions of dues because of illness or postgraduate study.

3. *Report of the President:*

President Wheeler commented on the successful campaign for passage of Proposition 22, to complete the unification of the medical and osteopathic professions in California. He paid tribute to those in charge of the campaign and all those who had assisted.

4. *Report of the President-Elect:*

President-Elect Sherman reported on impressions he had gained from several visits to component societies. In general, he said, he had found a warm reception and a spirit of cooperation with the Association's activities.

5. *Committee on Committees:*

Doctor Sherman as chairman of the Committee on Committees presented several nominations, which, on motion duly made and seconded, were approved. These were:

(a) New Committee on the Medical Aspects of Sports—Charles Hutter, Chairman, Los Angeles; Robert Palmer, San Francisco; George Buehler, Whittier; John Blinn, Jr., Stockton; Charles Aronberg, Los Angeles. Consultant: William A. Leovy, La Mesa (Liaison with the Committee on School Health) ; and one additional consultant to be named later.

(b) Committee on specialty certification of 41st Medical Society members—Malcolm Watts in place of Henry Brainerd, who is unable to serve.

(c) Robert F. Chinnock to the Committee on Maternal & Child Care, succeeding Edmund Overstreet, resigned, term ending 1964.

6. *Finance Committee:*

(a) Doctor Davis, Finance Committee chairman, presented a balance sheet as of November 30, 1962, and operating statements covering the month and the five months ended November 30, 1962. These were ordered filed.

(b) Doctor Davis reported that two meetings had been held to consider a proposed budget for the 1963-1964 fiscal year and that the budget would be presented at the January meeting.

(c) The request of the Bureau on Communications for appropriation of an additional $27,500 for television production was considered by the committee, which recommended that the appropriation not be approved at this time. On motion duly made and seconded, it was voted to disapprove the request.

(d) On the recommendation of the committee, it was moved, seconded and voted that of the 80 per cent of the Association's 1962 contribution to the American Medical Association—Education and Reearch Foundation be allocated 50 per cent to the California College of Medicine and 50 per cent equally among the other medical schools of the state which are not primarily tax supported.

7. *Bureau of Research & Planning:*

Mr. Klutch reported on the activities and accomplishments of the Bureau of Research & Planning during 1962 and outlined the types and numbers of studies completed and currently under way. Copies of this report are to be sent to all Councilors.

8. *State Department of Public Health:*

Doctor Malcolm Merrill, State Director of Public Health, presented a series of statistics on the giving of poliomyelitis vaccine, these figures to be presented to the National Advisory Committee in Washington in the coming week. These figures showed that more than 21,000,000 doses of vaccine have been given, that more than 99 per cent of the state's population has been offered the vaccine and that no cases of paralytic polio have been recorded as a result of the giving of the Type III vaccine. Reports of polio cases in California have been at an all-time low this year, 66 cases as compared with 77 in 1961. The 66 are further reduced to 61 when definitive diagnoses are applied.

9. *State Department of Social Welfare:*

Doctor Lester McDonald, medical director of the State Department of Social Welfare, reported that in 1962 there have been more than 33,000 applications for aid under the Medical Assistance to the Aged program and that of the current 15,000 plus cases, 40 per cent are in hospitals and 60 per cent in nursing homes. The department is working, he reported, on more liberal allowances for nursing home care as a means of bringing more nursing homes into the program.

In reply to questions on reported fraudulent practices by physicians and pharmacists in the aged programs, Doctor McDonald stated that only two practitioners, one a chiropractor, and ten pharmacists were under question following a year's experience.

10. *State Department of Mental Hygiene:*

Doctor Daniel Blain, State Director of Mental Hygiene, introduced Doctor Mark Gerstle of the California Youth Authority, who reported on the psychiatric training units set up in recent years in the custodial schools operated by the authority. Since 1958, he reported, some 1,700 patients have been handled, or about 20 per cent of the population of the schools.

In response to a question, Doctor Blain discussed the considerations now being given to possible changes in the legal interpretation of insanity or mental illness in criminal cases.

11. *California Hospital Association:*

The chairman introduced Mr. Frank R. McDougall, president of the California Hospital Association, who has been invited to attend Council meetings and to make such reports and comments as he chooses. Mr. McDougall reported to the Council that the unification of medical and osteopathic hospitals was progressing smoothly and rapidly. He also reported that his association is pushing the application of the Guiding Principles in the staffs of the member hospitals.

12. *Medical Executives Conference:*

Mr. Boyd Thompson, chairman of the Medical Executives Conference, reported that the subcommittee on Administration had met twice on the subject of the application of the Keogh Law and had received voluminous material from a variety of sources.

Mr. Fred Field, acting as legal consultant to this committee, reported that three actions had been proposed for Council consideration. These were:

1. The Council urge all component societies and their members to make haste slowly in embracing programs under the Keogh Law, especially since official regulations will require some time for formulation and adoption.

2. The Association, in order to provide a broad base, establish a statewide program format which would offer each participating physician a choice of programs for his own use.

3. The Medical Executives Conference to continue its committee in existence as a gathering place for source material and a forum for discussion of various proposals.

Mr. Hassard voiced approval of these proposals and stressed the need for caution in the absence of official regulations. Income tax advantages will not accrue until the tax returns filed for calendar 1963 and any program adopted by a physician may be dated back to January 1, 1963.

On motion duly made and seconded, the Council approved these recommendations.

13. *Committee on Legislation:*

Doctor Dan O. Kilroy, chairman of the Committee on Legislation, reviewed a series of proposals for legislation to be introduced in the 1963 session of the State Legislature and secured Council instructions.

Doctor Robert Vaughan commented on proposals for legal recognition of nurse-obstetric assistants and Doctor Bullock suggested that the legislative committee exercise its best judgment on the question of authorizing colored oleomargarine to be served, on request, in restaurants.

The Council authorized legislation to be introduced to provide legal immunity for physicians drawing blood for alcohol determination when done at the request of police officers. It also authorized the introduction of legislation to permit laboratory technicians to draw whole blood, to permit public administrators to order autopsies, to provide legal immunity for reports of tissue and similar committees, to support continued nurse training in two-year courses, to make state income tax deductions for medical expenses the same as federal deductions and to support proposed changes in the Rattigan Act. Other legislative proposals were discussed and the committee was given instructions by the Council as to its procedures and authority.

14. *Commission on Public Agencies:*

Doctor MacLaggan reported a request that the Association establish a special committee to investigate all deaths following administration of chloramphenicol. On motion duly made and seconded, it was voted to refer this matter to the appropriate committee, with authority to work with state and local health authorities and to call for consultation as needed.

Doctor MacLaggan also suggested that the Committee on State Medical Services be renamed the Liaison Committee to the State Department of Public Health. On motion duly made and seconded, it was voted to refer this suggestion to the Committee on Committees for study and report.

15. *Commission on Community Health Services:*

Doctor Harold Kay, chairman of the Commission on Community Health Services, asked that the newly created Committee on the Medical Aspects of Sports be oriented to the secondary school level and not concentrate its operations on the college or professional level. He was assured that this proposal had been given full consideration in the naming of the committee.

Doctor Kay also presented specimen copies of several reprints of "Health Tips" articles, prepared for distribution in response to requests from school and other authorities.

16. *Bureau on Communications:*

Doctor Bostick, bureau chairman, gave a progress report on the activities of the bureau and its proposed programs for the coming fiscal year.

17. *Proposition 22:*

On motion duly made and seconded, it was voted to allow a bonus to the director of the campaign for Proposition 22 and a bonus to the secretary of the Committee for Medical Progress.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 4:25 p.m.

CARL E. ANDERSON, M.D., *Chairman*
MATTHEW N. HOSMER, M.D., *Secretary*

In Memoriam

Ashley, Kennerley Comstock, Huntington Park. Died December 24, 1962, in Huntington Park, aged 60, of a coronary. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1928. Licensed in California in 1928. Doctor Ashley was a member of the Los Angeles County Medical Association.

✤

Bailey, Charles Albert, Beverly Hills. Died December 22, 1962, in Los Angeles, aged 72, of intracerebral hemorrhage. Graduate of the College of Physicians and Surgeons Medical Department, University of Southern California, 1919. Licensed in California in 1919. Doctor Bailey was a member of the Los Angeles County Medical Association.

✤

Brown, Adolph Martin, Beverly Hills. Died January 5, 1963, in Malibu, aged 57, of arteriosclerotic heart disease. Graduate of Wayne State University College of Medicine, Detroit, Michigan, 1933. Licensed in California in 1947. Doctor Brown was a member of the Los Angeles County Medical Association.

✤

Cassady, Everett S., Palm City. Died September 27, 1962, in Long Beach, aged 69, of myocardial infarct. Graduate of the University of Cincinnati College of Medicine, 1921. Licensed in California in 1922. Doctor Cassady was a member of the Los Angeles County Medical Association.

✤

Edwards, Stanley R. (Russell), Los Angeles. Died December 18, 1962, in Los Angeles, aged 52, of an aneurysm of carotid artery with thrombosis. Graduate of the University of Wisconsin Medical School, Madison, 1935. Licensed in California in 1941. Doctor Edwards was a member of the Los Angeles County Medical Association.

✤

Empie, William Maxwell, San Pedro. Died December 10, 1962, in San Pedro, aged 74, of cerebral vascular accident. Graduate of Northwestern University Medical School, Chicago, 1911. Licensed in California in 1924. Doctor Empie was a member of the Los Angeles County Medical Association.

✤

Johnston, William H., Santa Barbara. Died January 4, 1963, in Santa Barbara, aged 77. Graduate of the State University of Iowa College of Medicine, Iowa City, 1910. Licensed in California in 1927. Doctor Johnston was a member of the Santa Barbara County Medical Society.

✤

McAuley, John, Santa Ana. Died January 5, 1963, in Santa Ana, aged 81, of heart disease. Graduate of the University of Pittsburgh School of Medicine, Pennsylvania, 1910. Licensed in California in 1915. Doctor McAuley was a member of the Orange County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✤

Munoz-Flores, Jose, Los Angeles. Died December 25, 1962, in Los Angeles, aged 50, of coronary thrombosis. Graduate of the Universidad Nacional Facultad de Medicina, México, D.F., 1928. Licensed in California in 1952. Doctor Munoz-Flores was a member of the Los Angeles County Medical Association.

✤

Sasso, John Alphonso, Santa Ana. Died December 26, 1962, in Santa Ana, aged 78, of coronary thrombosis. Graduate of California Eclectic Medical College, 1915. Licensed in California in 1916. Doctor Sasso was a member of the Los Angeles County Medical Association.

✤

Sinclair, Archie Dewar, San Francisco. Died December 13, 1962, in San Francisco, aged 59, of leukemia. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1927. Licensed in California in 1927. Doctor Sinclair was a member of the San Francisco Medical Society.

✤

Teale, Barbara Baker, Westpoint. Died December 26, 1962, aged 44, from injuries received in an automobile crash. Graduate of the California College of Medicine, 1962. Licensed in California in 1962. Doctor Teale was a member of the Forty First Medical Society.

✤

Vaughan, Lynn Brian, Long Beach. Died January 6, 1963, in Long Beach, aged 75, of a urinary tract infection (pseudomonas). Graduate of Rush Medical College, Chicago, Illinois, 1914. Licensed in California in 1930. Doctor Vaughan was a member of the Los Angeles County Medical Association.

✤

Wheelis, John M., Beverly Hills. Died January 2, 1963, in Los Angeles, aged 83, of pulmonary embolism. Graduate of the University of Nashville Medical Department, Tennessee, 1905. Licensed in California in 1920. Doctor Wheelis was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

Woolfan, Emanuel Bertrand, Beverly Hills. Died December 26, 1962, in Los Angeles, aged 67. Graduate of Rush Medical College, Chicago, Illinois, 1922. Licensed in California in 1922. Doctor Woolfan was a member of the Los Angeles County Medical Association.

No. 16*

Misnomers, Missed Diagnosis, Ineffective Therapy and Legal Cripples

Localized joint pains, referred to by such misnomers as "tennis elbow," "carpal tunnel syndrome," "weaver's hand," "calcium deposit" and "trigger finger," are often blamed on trauma and occupational exposure, such as repetitive motions, microtrauma and the catch-all phrase "wear-and-tear."

Significant trauma can cause damage of one or more components of a joint and its adjacent mechanisms and may result in considerable permanent disability. With proper treatment, healing normally progresses steadily toward absorption of hemorrhage and edema, reunion of torn ligaments and fractures, and restoration of the smooth gliding tissues. Significant trauma does not produce any known permanent or recurrent granulomatous inflammatory condition in these structures that can be proved.

One article on the "carpal tunnel syndrome" makes the statement, "In every instance the [flexor] tendons were covered by an abnormally thick sheath of material, the nature of which is not known." In conditions, "the nature of which is not known," one finds the tendency to ascribe the cause to trauma, repetitive motions, or some similar unscientific etiology. The carpal tunnel syndrome is most commonly due to one of the rheumatic diseases producing a proliferative tenosynovitis compressing the median nerve.

A ganglion is often the first manifestation of degenerative disease of the ligaments or capsules of the joints. It is not produced by wound laceration, or by surgical incision. As a matter of fact, cure is effected by incision and excision of the degenerated area from which it arises, together with the ganglion. Here, then, significant trauma (surgical) cures a condition presumed by some to be caused by insignificant external trauma—a paradox.

Where effusion in a tendon sheath persists or recurs, the diagnosis that it was of traumatic origin becomes suspect. The pathological reason for acute or chronic tenosynovitis, in the absence of a significant trauma or infection, is that it is one of the granulomatous inflammations. These can be caused by chemical or physical agents, the more common ones being cholesterol, uric acid or rheumatoid factor, singly or in mixed lesions.

One granulomatous inflammation is Dupuytren's disease (and Peyroni's disease). In the early primary acute inflammatory phase of Dupuytren's disease, recent biopsies have shown an acute vasculitis. This disease is now so well recognized that fortunately it is not being claimed to be caused by trauma as often as in the past.

Gout is a systemic disease due to an inborn inability to excrete uric acid normally. A common misconception of the manifestations of gout is that it only occurs in the great toe, or that tophi can be found only in the ears. It can produce symptoms in or about any joint and in any bursa or synovial space. A sudden acute inflammatory attack about a joint is often due to gout. If such an acute episode occurs, which responds to colchicine and uricosuric drugs, the diagnosis is almost certain to be gout.

None of the rheumatic diseases or granulomatous inflammations presented here as examples have ever been created by slight or severe mechanical trauma either in experimental animals or in human beings. These diseases are associated with dysfunction of the reticuloendothelial system, and trauma does not produce a persistent stimulative effect on the cells of the reticuloendothelial system. The course of granulomatous inflammations is toward chronicity and recurrence.

The problem of diagnosis lies not so much in lack of proper medical reasoning and understanding as in specious socio-economic reasoning by others, and frequently results in ineffective treatment or in litigation which fails to truly help the patient.

Committee on Occupational Health
California Medical Association

Comments and Questions Are Welcomed by the Committee

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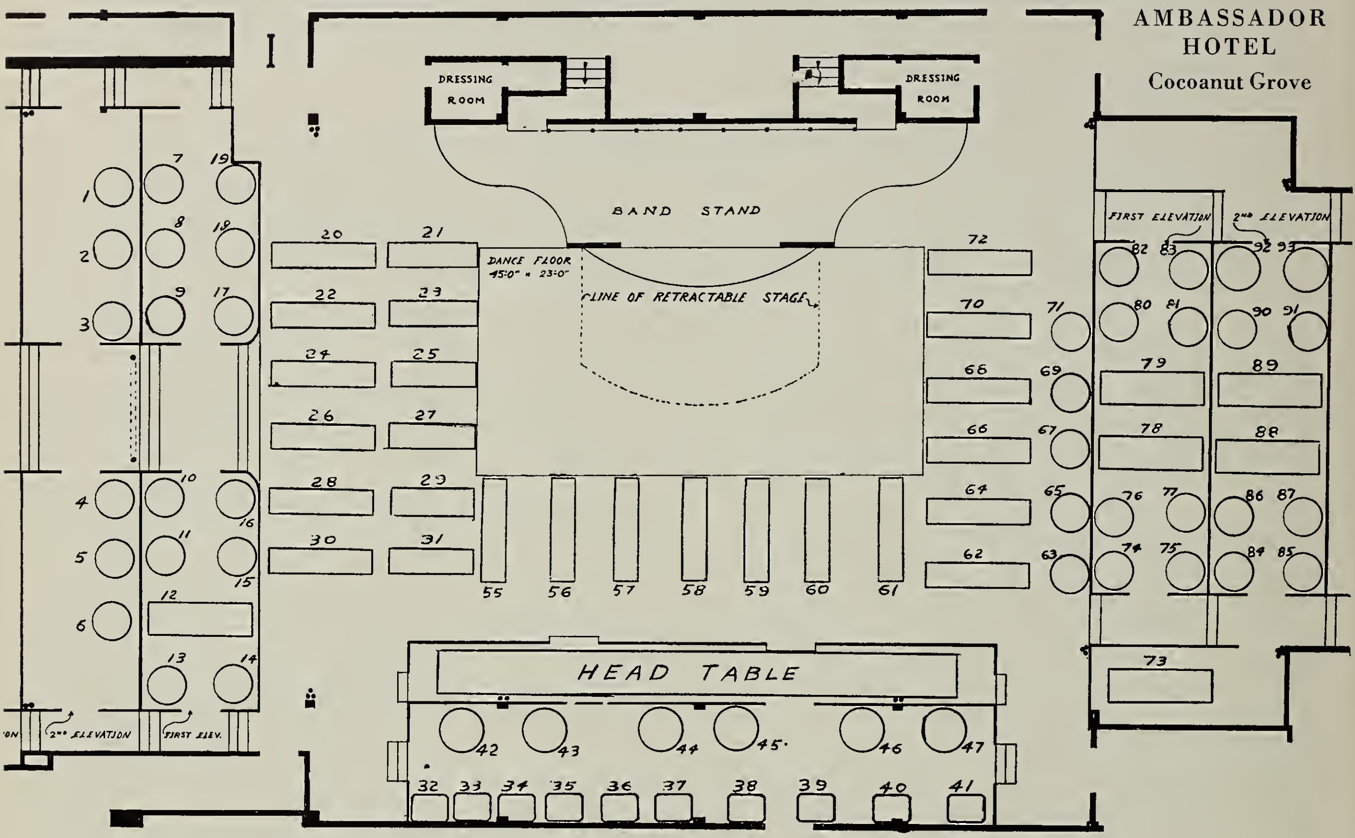
*This is the sixteenth of a series of articles prepared by the Committee on Occupational Health.

PRESIDENTS' *dinner-dance*

SUNDAY, MARCH 24, 1963



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5	6	23	10	40	2	65	4	82	4
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9	4	27	10	44	8	69	4	86	6
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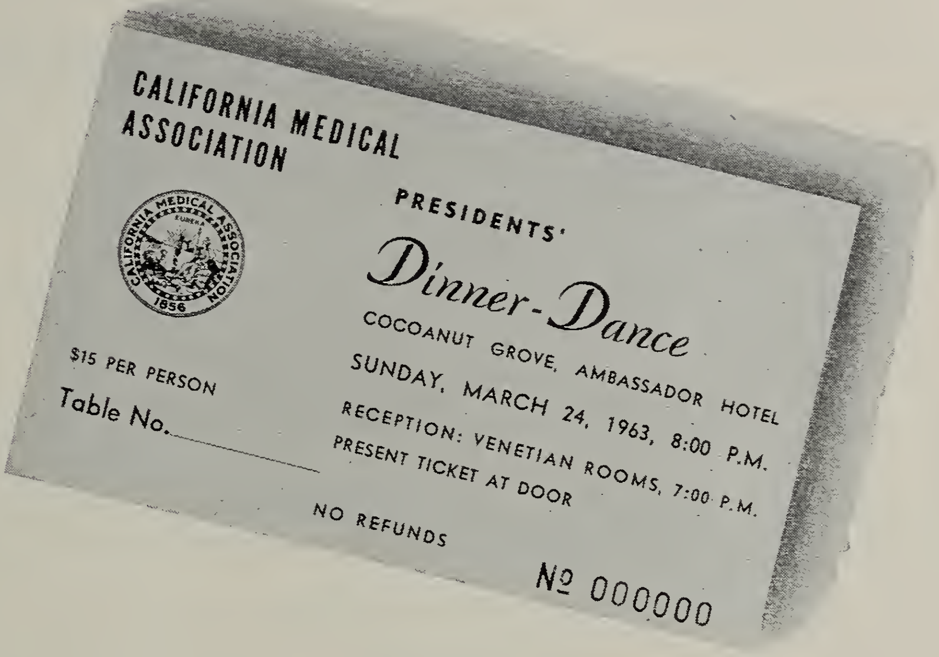

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THURSDAY, MARCH 7, 1963

Morning Meetings

PULMONARY DISEASE

John F. Murray, M.D., *Chairman*

9:30-10:00—**Diagnosis and Treatment of Asthma and Bronchitis**—Gildon N. Beall, M.D.

10:00-10:30—**Diagnosis and Treatment of Pulmonary Emphysema**—John F. Murray, M.D.

10:30-10:45—**Intermission.**

10:45-11:30—**Bacterial Infection of the Lung**—William L. Hewitt, M.D.

11:30-12:30—Panel: **The Evaluation of a Patient with an Abnormal Chest X-ray**—Doctors Beall, Hewitt and Murray.

TRAUMA FROM BIRTH TO DEATH

Charles O. Bechtol, M.D., *Chairman*

THE CHILD

9:30-10:15—**Fractures in Children**—Ernest M. Burgess, M.D.

10:15-11:00—**Poisons**—Harry F. Dietrich, M.D.

11:00-11:15—**Intermission.**

11:15-12:00—**Abdominal Trauma**—Wiley F. Barker, M.D.

Afternoon Meetings

THE YOUNG ADULT

2:00-3:00—**Athletic Injuries**—Ernest M. Burgess, M.D.

3:00-3:15—**Intermission.**

3:15-4:30—Panel: **Multiple Injuries**—Doctors Bechtol, Burgess, Dietrich and Barker.

Or Elective:

3:15-5:00—**The Medical Interview—Workshop limited to 25**—Frank F. Tallman, M.D.

Evening Meetings

7:00-8:00—**No Host—Social Hour.**

8:00—**Dinner—Athletic Injuries of Teenagers**—Ernest M. Burgess, M.D.

- Presented by UCLA School of Medicine, Thomas H. Sternberg, M.D., Assistant Dean and Head, Department of Continuing Education in Medicine and Health Sciences, and California Medical Association Committee on Postgraduate Activities.

- ***Guest Speaker:*** ERNEST M. BURGESS, M.D., Instructor of Orthopedics, University of Washington and Chief of Orthopedics, Doctors Hospital, Seattle.

DEL MONTE LODGE
PEBBLE BEACH

March 7-8, 1963

FRIDAY, MARCH 8, 1963

Morning Meetings

PULMONARY DISEASE

9:15-10:00—**Cor Pulmonale**—John F. Murray, M.D.

10:00-10:30—**Practical Management of Acid-Base Disturbances**—Daniel H. Simmons, M.D., Ph.D.

10:30-10:45—**Intermission.**

10:45-11:30—**Viral and Fungus Diseases of the Lung**—William H. Hewitt, M.D.

11:30-12:30—PANEL: **The Differential Diagnosis of Chest Pain**—Doctors Beall, Hewitt, Murray, Simmons.

TRAUMA FROM BIRTH TO DEATH

THE ADULT AND THE AGED

9:15-10:00—**Fractures in the Adult**—Charles O. Bechtol, M.D., and Ernest M. Burgess, M.D.

10:00-10:45—**Abdominal Trauma**—Wiley F. Barker, M.D.

10:45-11:00—**Intermission.**

11:00-11:45—**Burns**—Charles O. Bechtol, M.D., and Harry F. Dietrich, M.D.

11:45-12:30—**Fractures in the Aged**—Ernest M. Burgess, M.D.

Afternoon Meetings

2:00-2:45—**Office Pulmonary Physiology**—Daniel H. Simmons, M.D., Ph.D.

2:45-3:30—**Workup of an Allergic Patient**—Gildon N. Beall, M.D.

3:00-3:45—**Intermission.**

3:45-5:00—PANEL: **Treatment of Chronic Lung Disease**—Doctors Beall, Hewitt, Murray, Simmons.

OR ELECTIVE:

3:15-5:00—**The Medical Interview—Workshop limited to 25**—Frank F. Tallman, M.D.

HOST: Monterey County Medical Society . . . **REGIONAL CHAIRMAN:** James D. Niebel, M.D., Suite 409, Professional Building, Monterey. **INSTITUTE FEE:** $15.00. For additional information contact Postgraduate Activities office, California Medical Association, 693 Sutter Street, San Francisco 2. All California Medical Association members and their families are cordially invited to attend.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, M.D., M.P.H.
Director, State Department of Public Health

THE ROUTINE use of the Papanicolaou smear would practically eliminate cervical cancer as a cause of death, it is the belief of medical and health authorities.

A recently completed study by the health department on knowledge and utilization of the smear among a sample of Alameda County women showed that five out of every ten women 20 years and over have taken the Papanicolaou test. Three of ten said they had heard of it but had not used it. One-fifth of those questioned had never heard of the test.

There are some encouraging signs: the number of women using the test has increased in recent years, women are beginning to take the test at a younger age, and those who take it once tend to repeat it.

However, the use of the test is not general in any population group and it is particularly limited among non-white, foreign-born, and women in the lower economic stratum—the very groups among whom cervical cancer is most common.

In California alone, cervical cancer caused the death of more than 700 women in 1960. It is important that community resources be mobilized to make women aware of the importance of the test, to develop adequate facilities for it, and to provide those women who most need it with an opportunity to take it.

* * *

Not too long ago a Philadelphia research group, according to a news release, reported that influenza vaccine may produce antibodies against blood Group A, and should not be given to pregnant women because of the theoretical risk of hemolytic disease of the newborn.

Consultants to the U.S. Public Health Service pointed out that the broad antigenic properties of influenza vaccine are well known and are also common to other vaccines; that there is no evidence that hemolytic disease or other untoward reactions have occurred after its use, and pregnant women should be vaccinated as previously recommended.

* * *

It is public knowledge that the department strongly supports the recommendation of its expert advisory committee that all three types of the Sabin oral vaccine be fully used for the elimination of paralytic poliomyelitis in California.

I believe it appropriate, however, to repeat the group's second recommendation; that "it is of greatest importance to plan continuing vaccination programs to provide for the adequate immunization of the oncoming generation." Nearly 350,000 babies are born each year in California, a population which, in addition to the hundreds of newcomers who move into our state daily, will need protection against paralytic poliomyelitis.

* * *

Tuolumne County is now the 15th rural California county to take advantage of the department's Public Health Contract Services program. Office of the department will be located in Sonora, and it is anticipated that Dr. H. H. McGillis will serve as health officer.

Contract Services now provides joint state-county health programs with the counties of Alpine, Amador, Calaveras, El Dorado, Glenn, Lake, Lassen, Mariposa, Modoc, Mono, Nevada, Sierra, Tehama, Trinity and Tuolumne.

Siskiyou County remains unique among California counties in having no organized local health services. However, it is anticipated Siskiyou will join the program in July of this year.

* * *

Federal Community Health Facilities Service Projects totaling $2,548,000 have been awarded to six California health agencies by the U.S. Public Health Service and with the assistance of the State Health Department.

The projects include a study by Homemaker Service of Los Angeles to determine the nature and extent to which homemaker service can play a supporting role in the care and treatment of chronically ill or aged patients outside the hospital.

United Community Fund of San Francisco will provide a Central Medical Social Service Bureau. Patients are being discharged from major general hospitals without adequate planning in relation to family or home arrangements. Certain patients are not receiving medical social work which is readily available to many clinic patients. Physicians indicate many patients would have more satisfactory and rapid rehabilitation if medical social work were available.

INFORMATION

Income, Health Expenses, Medical Debts, and Assets of Older Persons

A Report by the Bureau of Research and Planning, California Medical Association

Recent publicity in the *A.M.A. News* and in the *New York Times* regarding income, debts, and medical care expenditures of older persons referred to the *1961 Survey of Consumer Finances* by the Survey Research Center of the University of Michigan, and to findings of the 1960 Census.

The purpose of this *Socio-Economic Report* is to provide some of the details of the Michigan survey, to introduce data recently published by the Department of H.E.W., and to present certain income estimates by the Bureau of Research and Planning.

The terms "spending unit" and "family unit" can be confusing unless defined.

A "spending unit" consists of all related persons living together who pool their income. An individual living alone may also be a spending unit.

A "family unit" consists of two or more related persons living in the same dwelling unit.

THE *1961 Survey of Consumer Finances*[1] is the sixteenth annual survey conducted to compile data on a wide range of topics as they concern a sample of the noninstitutionalized U. S. population. Data are collected on such topics as income, assets, debts, medical expenses, and consumer attitudes, opinions, and purchasing expectations.

While the Michigan survey reveals that the U. S. median income of spending units was $2,260 in 1960, where the age of the head of the unit was 65 and over, the family income was determined to be $2,897, according to the Bureau of the Census.[2] It was estimated to be 4.5 per cent greater in 1961, or $3,026. An explanation of the differences in the median income between the Michigan survey and the Census data is that the former actually includes some unrelated individuals, whereas the latter is composed of groups of two or more.

Table 1 shows the median income of U. S. families where the age of the head was 65 and over. The median for families headed by a person 65 and over

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[1] University of Michigan, *1961 Survey of Consumer Finances,* Survey Research Center, Monograph No. 24, 1962.

[2] U. S. Department of Health, Education, and Welfare, *Aging,* No. 96, October, 1962.

TABLE 1.—*Estimates of U. S. Family and Personal Incomes, 1960-1961*

Category	65+ 1960	65+ 1961	Per Cent Change 65+
Families (Age of Head 65 and Over)			
Total			
Median income	$2,897	$3,026	+ 4.5
Head year-round full-time worker			
Per cent of total families	17.5	16.9	− 3.4
Median income	$5,218	$5,529	+ 6.0
Persons 65 and Over			
Males with some income			
Per cent of total males	96.4	97.2	+ 0.8
Median income	$1,698	$1,758	+ 3.5
Per cent with less than $1,000	24.3	23.0	− 5.3
Year-round full-time workers			
Per cent of total with some income	17.2	17.0	− 1.2
Median income	$4,115	$4,025	− 2.2
Females with some income			
Per cent of total females	76.4	78.3	+ 2.5
Median income	$ 821	$ 854	+ 4.0
Per cent with less than $1,000	65.7	62.2	− 5.3
Year-round full-time workers			
Per cent of total with some income	4.3	5.2	+20.9
Median income	$2,838	$2,331	−17.9

(By applying the ratio of U. S. Median family income to that of California, the California Medical Association's Bureau of Research and Planning estimates that the median income of families in this State with heads 65 and over was $3,442 in 1960, and $3,597 in 1961. *Current Population Reports,* Series P 60, No. 37, Table D and E).

Source: Department H.E.W.; *Aging,* p. 4.

TABLE 2.—*Large Medical, Hospital, and Funeral Expenses Within Specified Groups*
(Percentage distribution of spending units)

Group Characteristic	Total	No Such Expense in 1960	At Least One Such Expense† in 1960	Type of Expense in 1960†		
				Medical	Hospital	Funeral
All SU's (spending units)	100	71	29	23	10	3
Age of SU head						
18-24	100	76	24	18	12	*
25-34	100	68	32	25	13	3
35-44	100	73	27	22	8	3
45-54	100	68	32	27	12	2
55-64	100	71	29	22	10	4
65 and over	100	76	24	19	9	4

*Less than one-half of one per cent.

†Some units had more than one such expense. Details do not therefore add to total.

Source: 1961 Survey of Consumer Finances, Table 4-1.

TABLE 3.—*Amount of Medical Debt Outstanding, Within Specified Groups*
(Percentage distribution of spending units)

Group Characteristic	Total	Medical Debt Outstanding, Jan.-Feb. 1961†					
		None	Under $100	$100-199	$200-499	$500 and Over	Amount N.A.
All SU's (spending units)	100	90	4	2	2	1	1
Age of SU head							
18-24	100	88	4	4	1	1	2
25-34	100	88	6	1	4	*	1
35-44	100	92	3	2	1	1	1
45-54	100	89	4	2	4	1	*
55-64	100	92	3	1	2	1	1
65 and older	100	96	2	*	1	1	*
Persons in SU age 65 and over							
None	100	90	4	2	2	1	1
At least one	100	95	2	1	1	1	*
1960 SU income							
Under $3,000	100	91	4	1	2	1	1
$3,000-$4,999	100	88	5	3	2	1	1
$5,000-$7,499	100	88	5	3	2	1	1
$7,500 and over	100	94	1	2	2	1	*

*Less than one-half of one per cent.

†Medical, Hospital, and Funeral.

Source: op. cit., Table 4-2.

was estimated to be $3,026 in 1961 as compared to a median income of $5,737 for all families. It was therefore 4.5 per cent greater in 1961 than in 1960 for older persons, as compared with 2.1 per cent greater for all families in 1961 than in 1960.

The University of Michigan respondents were asked to indicate whether they had at least one "large" medical, hospital, and funeral expense during 1960 which remained unpaid in early 1961. Inasmuch as "large" was based upon each individual's definition of the term, the survey does not note the size of the expenditure. Table 2 reveals, however, that 76 per cent of persons 65 and over had no such expense, as compared with 71 per cent for the entire sample. Twenty-four per cent of the persons 65 and over had at least one large expense which remained unpaid in early 1961, as compared with 29 per cent for the entire sample. Table 2 shows the distribution by various age groups, and by the type of expense.

The amount of the medical debt outstanding for the respondents in the Michigan survey by age group is revealed in Table 3. A lower percentage of the aged spending units had outstanding debts than did all respondents or any other age group. Conversely, the age group with the greatest proportion of no medical debts (96 per cent) was the 65-plus group. Four per cent of the 65-plus group had outstanding debts, in comparison with 10 per cent for the entire sample. It is also interesting to note that nine per cent of the spending units with incomes under $3,000 had outstanding debts, whereas six per cent of the spending units with incomes of $7,500 and over had such debts. It was 12 per cent for each of the income groups of $3,000-$4,999 and $5,000-$7,499. In the highest age group, and in the lowest income category, only one per cent of each group had outstanding debts of $500 or more.

The Economic Research Department of the A.M.A. secured additional data on the 1960 assets and 1959 income of the respondents in the 1960 Survey of Consumer Finances. The data are as follows:

> The median value of total assets held by over-65 spending units was $8,124 in 1960, almost twice as much as the $4,663 which was the median value of total assets of all other age groups.
>
> The median value of home equity for over-65 spending units was $4,559. This is almost 4½ times as much as the $1,028 reported for younger spending units.
>
> The median value of liquid assets was nearly 2½ times as much for over-65 spending units—$1,012 compared with $460.
>
> Some 64 per cent of the over-65 spending units owned homes; 53 per cent of the younger units. Among the over-65 spending units, 53 per cent owned mortgage-free homes compared with 18 per cent of the younger group.
>
> On the basis of 1959 figures, 74 per cent of the older spending units had no personal debt, compared with 34 per cent of the younger units.
>
> Of all aged spending units, only 3 per cent owed more than $1,000, compared with 20 per cent of the younger groups. Some 8 per cent of the older group had debts between $200 and $1,000, compared with 28 per cent of younger units; and 15 per cent had debts under $200 compared with 18 per cent of younger spending units.
>
> Some 86 per cent of the over-65 spending units in the 1960 survey had no installment debts. By comparison only 48 per cent of the younger units said they owed no installment debts.

In commenting on the comparison of income between the older age group and the total sample, the *A.M.A. News* article of October 15, 1962, notes that, "a comparison of income . . . should include adjustments for Old Age Assistance recipients and for relief given those over 65 through double income tax exemptions, full medical expense deductions, and exemptions of social security and other retirement benefits and income."

The Bureau of Research and Planning wishes to note that, for purpose of clarification, the data and text attributed to the Economic Research Department vary somewhat from those published in the October 15 issue of the *A.M.A. News*.

California Medical Association, 693 Sutter Street, San Francisco 2.

Rural Health*

In six western states† the words *rural health* do not mean what they did forty years ago when the American Medical Association first took official notice of the status of medicine in rural America.§ Current meaning was made very clear at Sacramento last month when delegates from the six states met in the Fourth Regional Rural Health Conference sponsored by the A.M.A. Council on Rural Health.

Rural health today is not one subject but three. There is health of that segment of the population, largely native, living in rural areas. There is an entirely different situation regarding health of a group greatly expanded in recent years, the migratory laborers in agriculture and, finally, it appears that there is emerging another group whose members no longer migrate. They have been called, "workers seasonally employed in agriculture."

It is clear that needs of these three groups differ markedly. At the Sacramento conference it appeared that many of the original problems relative to health in rural areas have been solved. Medical training, transportation, communication, transmission of electronic data, and dwindling rural population have combined to make rural and urban care essentially equal.

Progress in providing health services for migrant workers has been slow. They have the highest rates for infant mortality, lowest rates for immunizations, and low rates for utilization of medical care. California with approximately 250,000 migrants (workers and dependents) has the greatest problem. There the growers and physicians in private practice have been cooperating to bring modern care to these people. Under a law passed by the 1961 legislature, ten county plans are being developed and it is expected that others will follow. Most of these are prepayment plans. California Physicians' Service has sponsored a pilot plan in Tulare County in order to obtain actuarial experience not now available. Others are in various stages of development but it is expected that several will be in operation with the 1963 growing season.

In Idaho it is recognized that the migrants need better housing, better school opportunities and more health programs for those who become ill. County hospitals now provide care and public health nurses call on the chronically ill. Physicians in eastern Washington have assumed traditional responsibility for giving care to the needy but have also developed

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*Reprinted from *Northwest Medicine*, 61:925, Nov. 1962.

†Arizona, California, Idaho, Oregon, Nevada, Washington.

§The House of Delegates took action, May, 1922, on shortage of physicians in rural areas. A Committee on Rural Medical Service was formed in 1945 and changed to the Council on Rural Health in 1951. The Council is a standing committee of the Board of Trustees and is directed by the Division of Environmental Medicine.

TABLE 2.—*Large Medical, Hospital, and Funeral Expenses Within Specified Groups*
(Percentage distribution of spending units)

Group Characteristic	Total	No Such Expense in 1960	At Least One Such Expense† in 1960	Type of Expense in 1960†		
				Medical	Hospital	Funeral
All SU's (spending units)	100	71	29	23	10	3
Age of SU head						
18-24	100	76	24	18	12	*
25-34	100	68	32	25	13	3
35-44	100	73	27	22	8	3
45-54	100	68	32	27	12	2
55-64	100	71	29	22	10	4
65 and over	100	76	24	19	9	4

*Less than one-half of one per cent.
†Some units had more than one such expense. Details do not therefore add to total.
Source: 1961 Survey of Consumer Finances, Table 4-1.

TABLE 3.—*Amount of Medical Debt Outstanding, Within Specified Groups*
(Percentage distribution of spending units)

Group Characteristic	Total	Medical Debt Outstanding, Jan.-Feb. 1961†					
		None	Under $100	$100-199	$200-499	$500 and Over	Amount N.A.
All SU's (spending units)	100	90	4	2	2	1	1
Age of SU head							
18-24	100	88	4	4	1	1	2
25-34	100	88	6	1	4	*	1
35-44	100	92	3	2	1	1	1
45-54	100	89	4	2	4	1	*
55-64	100	92	3	1	2	1	1
65 and older	100	96	2	*	1	1	*
Persons in SU age 65 and over							
None	100	90	4	2	2	1	1
At least one	100	95	2	1	1	1	*
1960 SU income							
Under $3,000	100	91	4	1	2	1	1
$3,000-$4,999	100	88	5	3	2	1	1
$5,000-$7,499	100	88	5	3	2	1	1
$7,500 and over	100	94	1	2	2	1	*

*Less than one-half of one per cent.
†Medical, Hospital, and Funeral.

Source: op. cit., Table 4-2.

was estimated to be $3,026 in 1961 as compared to a median income of $5,737 for all families. It was therefore 4.5 per cent greater in 1961 than in 1960 for older persons, as compared with 2.1 per cent greater for all families in 1961 than in 1960.

The University of Michigan respondents were asked to indicate whether they had at least one "large" medical, hospital, and funeral expense during 1960 which remained unpaid in early 1961. Inasmuch as "large" was based upon each individual's definition of the term, the survey does not note the size of the expenditure. Table 2 reveals, however, that 76 per cent of persons 65 and over had no such expense, as compared with 71 per cent for the entire sample. Twenty-four per cent of the persons 65 and over had at least one large expense which remained unpaid in early 1961, as compared with 29 per cent for the entire sample. Table 2 shows the distribution by various age groups, and by the type of expense.

The amount of the medical debt outstanding for the respondents in the Michigan survey by age group is revealed in Table 3. A lower percentage of the aged spending units had outstanding debts than did all respondents or any other age group. Conversely, the age group with the greatest proportion of no medical debts (96 per cent) was the 65-plus group. Four per cent of the 65-plus group had outstanding debts, in comparison with 10 per cent for the entire sample. It is also interesting to note that nine per cent of the spending units with incomes under $3,000 had outstanding debts, whereas six per cent of the spending units with incomes of $7,500 and over had such debts. It was 12 per cent for each of the income groups of $3,000-$4,999 and $5,000-$7,499. In the highest age group, and in the lowest income category, only one per cent of each group had outstanding debts of $500 or more.

The Economic Research Department of the A.M.A. secured additional data on the 1960 assets and 1959 income of the respondents in the 1960 Survey of Consumer Finances. The data are as follows:

> The median value of total assets held by over-65 spending units was $8,124 in 1960, almost twice as much as the $4,663 which was the median value of total assets of all other age groups.
>
> The median value of home equity for over-65 spending units was $4,559. This is almost 4½ times as much as the $1,028 reported for younger spending units.
>
> The median value of liquid assets was nearly 2½ times as much for over-65 spending units—$1,012 compared with $460.
>
> Some 64 per cent of the over-65 spending units owned homes; 53 per cent of the younger units. Among the over-65 spending units, 53 per cent owned mortgage-free homes compared with 18 per cent of the younger group.
>
> On the basis of 1959 figures, 74 per cent of the older spending units had no personal debt, compared with 34 per cent of the younger units.
>
> Of all aged spending units, only 3 per cent owed more than $1,000, compared with 20 per cent of the younger groups. Some 8 per cent of the older group had debts between $200 and $1,000, compared with 28 per cent of younger units; and 15 per cent had debts under $200 compared with 18 per cent of younger spending units.
>
> Some 86 per cent of the over-65 spending units in the 1960 survey had no installment debts. By comparison only 48 per cent of the younger units said they owed no installment debts.

In commenting on the comparison of income between the older age group and the total sample, the *A.M.A. News* article of October 15, 1962, notes that, "a comparison of income . . . should include adjustments for Old Age Assistance recipients and for relief given those over 65 through double income tax exemptions, full medical expense deductions, and exemptions of social security and other retirement benefits and income."

The Bureau of Research and Planning wishes to note that, for purpose of clarification, the data and text attributed to the Economic Research Department vary somewhat from those published in the October 15 issue of the *A.M.A. News.*

California Medical Association, 693 Sutter Street, San Francisco 2.

Rural Health*

IN SIX WESTERN STATES† the words *rural health* do not mean what they did forty years ago when the American Medical Association first took official notice of the status of medicine in rural America.§ Current meaning was made very clear at Sacramento last month when delegates from the six states met in the Fourth Regional Rural Health Conference sponsored by the A.M.A. Council on Rural Health.

Rural health today is not one subject but three. There is health of that segment of the population, largely native, living in rural areas. There is an entirely different situation regarding health of a group greatly expanded in recent years, the migratory laborers in agriculture and, finally, it appears that there is emerging another group whose members no longer migrate. They have been called, "workers seasonally employed in agriculture."

It is clear that needs of these three groups differ markedly. At the Sacramento conference it appeared that many of the original problems relative to health in rural areas have been solved. Medical training, transportation, communication, transmission of electronic data, and dwindling rural population have combined to make rural and urban care essentially equal.

Progress in providing health services for migrant workers has been slow. They have the highest rates for infant mortality, lowest rates for immunizations, and low rates for utilization of medical care. California with approximately 250,000 migrants (workers and dependents) has the greatest problem. There the growers and physicians in private practice have been cooperating to bring modern care to these people. Under a law passed by the 1961 legislature, ten county plans are being developed and it is expected that others will follow. Most of these are prepayment plans. California Physicians' Service has sponsored a pilot plan in Tulare County in order to obtain actuarial experience not now available. Others are in various stages of development but it is expected that several will be in operation with the 1963 growing season.

In Idaho it is recognized that the migrants need better housing, better school opportunities and more health programs for those who become ill. County hospitals now provide care and public health nurses call on the chronically ill. Physicians in eastern Washington have assumed traditional responsibility for giving care to the needy but have also developed

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*Reprinted from *Northwest Medicine,* 61:925, Nov. 1962.

†Arizona, California, Idaho, Oregon, Nevada, Washington.

§The House of Delegates took action, May, 1922, on shortage of physicians in rural areas. A Committee on Rural Medical Service was formed in 1945 and changed to the Council on Rural Health in 1951. The Council is a standing committee of the Board of Trustees and is directed by the Division of Environmental Medicine.

a prepayment plan, covering the worker only, paid for by the employer.

One of the most interesting developments in rural health is reported from Kern County, California. This work is with the third group, the non-migratory workers and their families. Mexicans predominate and their greatest need was for health education but language and cultural differences interfered. Finally it was decided to recruit health educators from the worker group. They were brought in to the health department where they were given a broad, practical education in hygiene, sanitation, nursing, child health, nutrition, and availability of community health resources. Thus prepared, the health educators went back to their own people where they were understood and where they were able to exert influence previously impossible for those who did not speak Spanish and who did not recognize the importance of Mexican cultural background.

Theme of the Sacramento conference was "Good Rural Health—Everybody's Business." It soon became apparent, however, that rural health is a triad rather than unity, and that it is achieved, not by everybody, but by individuals, working as rural people have since time immemorial—for themselves —and some of the time for each other.

LETTERS *to the Editor*

Decrease in Serum Cholesterol With Surgical Stress

THE INTERESTING OBSERVATIONS of Goodman and associates in the November issue of CALIFORNIA MEDICINE prompts us to comment on analogous serum lipid and lipoprotein measurements currently being performed in our laboratories. Thus far, blood has been collected from over 50 patients immediately before surgery, at 30-minute intervals after induction of anesthesia and within 1 to 2 hours postoperatively. Approximately one-half of the subjects exhibited moderate to marked reduction in lipemia. Decreases in serum total and beta lipoprotein cholesterol concentrations were accompanied by diminutions in amounts of lipoproteins of S_f 0-400. Lipopenic responses were frequently most striking 30 minutes postinduction whereas smaller depressions obtained thereafter. These findings are consistent with those of Goodman and co-workers.

The rapid rate at which serum lipid parameters are lowered during surgery may suggest a relationship to other factors as well as stress. For example, a number of commonly used inhalation anesthetics are efficient lipid solvents. In our laboratories, treatment of serum with many of these agents produced declines in lipid and lipoprotein levels not unlike those often noted in anesthetized patients. It is noteworthy that the degree of lipopenic response *in vitro* was a characteristic property of each inhalation anesthetic studied. Moreover, our data indicate that the lipid-lowering capacity of some surgical anesthetics may be correlated with pharmacologic activity. A brief summary of our preliminary studies appeared in the October 1962 issue (Part 2) of *Circulation.* A more detailed report will be published shortly.

RONALD L. SEARCY, Ph.D.
JOHN A. GIDDINGS, B.A.
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California College of Medicine,
Los Angeles, California.

NEWS & NOTES

NATIONAL · STATE · COUNTY

HUMBOLDT

Dr. Monna M. Sheller has been appointed health officer for Humboldt County, taking the place of Dr. Carl T. Wallace who has been serving part-time as temporary health officer for more than a year.

The new health officer, who received an M.P.H. degree at the University of California, Berkeley, in 1959, was a resident in public health with the Clackamas County Health Department in Oregon before taking her new post.

LOS ANGELES

Mr. Harry Nelson, medical editor of the *Los Angeles Times,* recently received an award from the Medical Research Association of California "for his singular contribution in the field of science"; and Dr. J. Earl Thomas, a physiologist at Loma Linda University, was honored for his "contribution to the advancement of medical research."

Dr. Clayton G. Loosli, dean of the University of Southern California School of Medicine, was elected president of the association for the year 1963-64.

SAN FRANCISCO

A postgraduate course in **Recent Advances in Gastroenterology** will be given May 27-29, 1963, in San Francisco by the American Gastroenterological Association in cooperation with the University of California School of Medicine and Continuing Education in Medicine and Health Sciences. The third triennial course of this type to be offered by the association, it will be held at U. C. Medical Center. It precedes the annual meeting of the **American Gastroenterological Association,** May 30-June 1, at the Fairmont Hotel, San Francisco.

Further information may be obtained from Dr. John R. Gamble, 655 Sutter Street, San Francisco 2.

Program directors for the course are Dr. Dwight L. Wilbur and Dr. Leon Goldman. Dr. Gamble and Dr. John V. Carbone are associate directors.

GENERAL

A significant new move to provide handling of government-financed programs within the private enterprise sector of the economy was made February 1 with the establishment of an "insured" **prepaid medical care program for Welfare recipients** in Santa Barbara County.

The new "Santa Barbara Plan"—devised, backed and sponsored by the medical society there—provides for professional services handled on a prepayment basis by California Physicians' Service for some 3,000 recipients of Public Assistance Medical Care and Medical Aid for the Aged. This pilot program, approved by the State Department of Social Welfare on an experimental basis within Santa Barbara County only, will involve approximately $350,000 annual cost and provides the first sizable test of such an approach in a major California area.

The physicians of Santa Barbara sought and gained approval for the plan so that these programs could be handled **within the framework of competitive enterprise.** The doctors expressed the feeling that only through such mechanisms can the profession maintain the control and direction vital to proper case management. Studies and negotiations continued for almost a year, with the County ultimately agreeing that the proposed program would result in more and better health care for the taxpayers' money.

MAA Rates for Nursing Homes

State-prescribed rates for Kerr-Mills Medical Assistance for the Aged patients of California nursing homes went into effect February 1, setting new maximums to replace the October, 1961, "freeze" level used since the program's inception January 1, 1962. A 90-day moratorium on the change has been granted those county welfare departments that had requested negotiation with the state for higher rates.

The new structure, established by the Department of Finance, sets two "ceilings," one for basic care and the other for extensive care, and provides a three-dollar differential favoring Northern California over Southern California.

Basic care maximums are $219 north of the Tehachapis and $216 south. A six-point criterion for "extensive care" provides for maximums of $272 and $269, north and south.

Originally, rates were based on local county levels as they had existed in October, 1961, with "unusual circumstances" permitting the basic $255 maximum to be raised, in some instances, to the $300 level.

The State Board of Social Welfare, which administers the federal-state-county cost-sharing program of aid for the needy and near-needy aged, has prepared detailed descriptions of categories under which a patient is considered qualified for "extensive care" support. Copies may be obtained from each county welfare medical consultant.

Briefly, the criteria for "extensive care" payments are the need for:

1. Hand or special feeding.
2. Operation of special equipment, such as oxygen, intermittent pressure machines, etc.
3. Care for incontinence and colostomies.
4. Time-consuming special skills required for maintenance of the patient in bed under physician's orders.
5. Nursing and related services for achieving or maintaining physical independence.
6. Special diets, including low sodium, diabetic, low fat or low cholesterol.

Counties have been given until May 1 to complete classification of patients, whose physicians should acquaint themselves with the criteria.

The plan as evolved utilizes the same fee schedule followed by welfare programs throughout the state (currently 1957 RVS at $4), but the coverage will be handled through C.P.S. on a no-profit, no-loss basis, with any possible deficits being underwritten by the physicians of Santa Barbara.

* * *

A course for nursing aides in nursing homes and related facilities outlined by committees of the California League for Nursing and the Joint Council to Improve the Health Care of the Aged is now being used as a guide by two state agencies.

Prepared by an advisory committee under the chairmanship of Walter Batchelder, M.D., executive secretary of the joint council and a member of the staff of the California Medical Association, the outline is serving as a criterion for both the State Department of Education and the State Department of Employment.

* * *

The Ninth Congress of the **Pan-Pacific Surgical Association** will be held November 5-13, 1963, in Honolulu, and the **first Pan-Pacific Mobile Educational Lecture Seminar** is scheduled for the period from November 13 to December 10, 1963, in New Zealand, Australia, Thailand, the Philippines, Hong Kong and Japan.

The seminar through the Pacific area offers, for the first time, scientific meetings in each country presenting medical material unique to the areas.

Further information may be obtained from Dr. F. J. Pinkerton, Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii.

EDUCATION NOTICES

POSTGRADUATE

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 693 Sutter Street, San Francisco 2.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Feb. 14-March 21—**Dermatology in Clinical Practice.** Thursday afternoons. 12 hours. $50.

Feb. 20-March 2—**Clinical Postgraduate Program in Mexico City.** 18 hours. $100.

Feb. 21-23—**Proctology and Sigmoidoscopy.** Thursday-Saturday. 15½ hours. $50, Friday-Saturday $30.

March 16-April 7—**Clinical Postgraduate Program in Israel and Greece.** 24 hours. $200.

March 22-23—**The Broadening Scope of Psychosomatic Medicine.** Friday-Saturday. 12 hours. $25.

March 25-29—**Lower Extremities Prosthetics.** Monday-Friday. 40 hours. $125.

April 12-May 4—**Clinical Postgraduate Program in Japan and Hong Kong.** 33 hours. $200.

April 20—**Inhalation Therapy.** Saturday. 6 hours.*

April 27-28—**The Narcotics Problem.** Saturday-Sunday. 12 hours. $5.

April 29-May 3—**Upper Extremities Prosthetics.** Monday-Friday. 40 hours. $125.

May 6-10—**Immunology and Allergies.** Monday-Friday. Long Beach V. A. Hospital. 43 hours. $100 or $25 per day.

May 11—**Management of Medical Emergencies.** Saturday. 8 hours.*

May 12—**Management of Obstetrical Emergencies.** Sunday. 8 hours.*

May 25—**Aging in a Democracy.** Saturday. 8 hours. $2.50.

May 26—**Trends in Geriatric Therapy.** Sunday. 8 hours.*

June 14-15—**Pediatric Ophthalmology.** Friday-Saturday. 18 hours.*

June 21-22—**Diseases of the Kidney.** Friday-Saturday. 18 hours.*

June 24-28—**Functional Bracing of the Upper Extremities.** Monday-Friday. 40 hours. $125.

June 28-29—**Minor Surgery.** Friday-Saturday. 12 hours.*

Dates by Arrangement—**Clinical Traineeships**—Anesthesia, Dermatology and Pediatrics, Anatomy, Radioisotopes, Urology: 2 weeks, $150; 4 weeks, $250. Minimum period, 2 weeks.

For information on courses for physicians or ancillary personnel, contact: Thomas H. Sternberg, M.D., Assistant Dean and Head, Department of Continuing Education in Medicine and Health Sciences, U.C.L.A. Medical Center, Los Angeles 24, BRadshaw 2-8911, or GRanite 8-9711, Ext. 2115.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

February 15-16—**Clinics in Neurology.** Friday-Saturday. 12 hours. $45.

February 25-March 1—**Course for Physicians in General Practice.** Mount Zion Hospital, San Francisco. Monday-Friday. 35 hours. $100, including lunches Monday-Thursday.

March 2-3—**Multiple Injuries and Trauma.** 14 hours. $40.

March 13-17—**Diagnostic Radiology.** Wednesday-Sunday. 30 hours. $110, including lunches, or $25 a day.

March 14-April 11—**Man to Man.** Thursday evenings. 5 hours. $1.50 each lecture. $7.50 series.

March 29-30—**Diabetes of Many Types.** Friday-Saturday. 13 hours. $40.

April 18-20—**General Surgery.** Thursday-Saturday. 14 hours. $50.

April 26-28—**Recent Advances in Pediatrics, Neurology and Hematology.** Friday-Sunday. 16 hours. $50.

May 2-3—**Ear, Nose and Throat.** Thursday-Friday.*†

May 16-17—**Proctology.** Thursday-Friday. 14 hours. $50.

May 18-19—**Clinical Orthopedics: The Foot and Ankle.** Saturday-Sunday.*†

May 24-26—**Law and the Practice of Medicine.** Friday-Sunday.*†

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*Fees to be announced.

†Hours to be announced.

May 27-29—**Recent Advances in Gastroenterology.** Monday-Wednesday. 18 hours. American Gastroenterological Association Members: $35. Non-members: $50.

Continuously—Courses presented by special arrangement: Principles and Clinical Uses of Radioisotopes (full time for one to three months), Anesthesiology (full time for one to three weeks).

For information on courses for physicians or ancillary personnel, contact: Seymour M. Farber, M.D., Assistant Dean, Dept. of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Room 565-U, San Francisco 22, MOntrose 4-3600, Ext. 179.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

March 27-28—**Practical Aspects of Difficult Endocrine Problems.** Los Angeles County Hospital. Wednesday-Thursday, 9:00 a.m.-5:00 p.m. $45.

April 4-June 6—**Ward Walks in Rare Diseases.** Los Angeles County Hospital, 7:30-9:30 p.m. $100.

June 1-30—**Medical Centers of Europe.** London, Copenhagen, Stockholm and Paris. Tuition: $250.

July 31-August 16—**Sixth Annual Refresher Course in Hawaii,** and on board the S.S. *Lurline.* (Air travel also possible). Tuition: Island portion, $100; Island and ship portions, $125.

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.

Advanced Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85. Physicians may register at any time.

Contact: Phil R. Manning, M.D., Associate Dean, Postgraduate Division, USC School of Medicine, 2025 Zonal Ave., Los Angeles 33, CApital 5-1511, Ext. 9.

LOMA LINDA UNIVERSITY

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed, other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.
2. **Pulmonary Diseases** (can be arranged).

Continuously: **Illustrated Medical Lectures.** Thirty-minute tape recordings and accompanying 35 mm. filmstrips, 50 to 80 full-color pictures for screen, hand or desk viewer. Available individually or by subscription. Twelve or 36 titles per year, all titles produced in one year in any chosen specialty. Projectors and viewers included in subscription plans. *Contact:* Loma Linda University, Illustrated Medical Lectures, Los Angeles 33.

For information contact: W. F. Norwood, Ph.D., Assistant Dean and Chairman, Division of Continuing Education, Loma Linda University School of Medicine, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

PRESBYTERIAN MEDICAL CENTER

March 1-2—**Operable Heart Disease.** Friday-Saturday. 14 hours. $25.

March 6-8—**Keratoplasty.** Contact: The Eye Bank, Presbyterian Medical Center.

March 9—**Office Diagnosis.** Saturday. 7 hours. $25.

March 16-17—**Cancer.** Saturday-Sunday. 14 hours. $25.

March 23—**Fractures, "4-R's."** Saturday. 7 hours. $25.

April 3-5—**Highlights of Modern Ophthalmology.** 3 days. Contact: The Eye Bank, Presbyterian Medical Center.

April 6—**Minor Surgery: Office and Hospital.** Saturday. 7 hours. $25.

Contact: Arthur Selzer, M.D., chairman, Education Committee, Presbyterian Medical Center, Clay & Webster Streets, San Francisco 15. WEst 1-8000.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSES

West Coast Counties. In cooperation with UCLA School of Medicine. Thursday and Friday. March 7 and 8. Del Monte Lodge, Pebble Beach. Chairman: James D. Niebel, M.D., Suite 409, Professional Building, Monterey.

North Coast Counties. In cooperation with USC School of Medicine. Thursday and Friday. April 4 and 5. Hoberg's Resort, Lake County. Chairman: Richard C. Barnett, M.D., 450 Pitt Avenue, Sebastopol.

San Joaquin Valley Counties. In cooperation with Stanford University School of Medicine. Thursday and Friday. May 30 and 31. Ahwahnee Hotel, Yosemite. Chairman: Thomas J. Fuson, M.D., 2944 Fresno Street, Fresno.

Sacramento Valley Counties. In cooperation with University of California School of Medicine, San Francisco. Thursday through Saturday. June 27 through 29. Harvey's Wagon Wheel, Lake Tahoe. Chairman: A. John Quinn, M.D., 2600 Capitol Avenue, Suite 312, Sacramento 16.

For information regarding Postgraduate Circuit Courses and Postgraduate Institutes, contact: Postgraduate Activities, California Medical Association, 693 Sutter Street, San Francisco 2. PRospect 6-9400, Ext. 68.

AUDIO-DIGEST FOUNDATION

Audio-Digest Foundation, the California Medical Association's nonprofit subsidiary organized for the practicing physician's continuing postgraduate medical education, has available its Catalog of Classics, representing tape-recorded highlights of the past year's most significant medical meetings (American Medical Association, American College of Physicians, American Society of Anesthesiologists, American College of Obstetricians and Gynecologists, and dozens of university postgraduate courses). The new Catalog lists 355 one-hour tape-recordings representing all areas of medical practice. Copies of the catalog and information concerning continuing subscriptions to Audio-Digest programs (General Practice, Obstetrics-Gynecology, Anesthesiology, Pediatrics, Internal Medicine and Surgery and a prospective new service in Ophthalmology) may be obtained by writing to Claron L. Oakley, Editor, 619 South Westlake Avenue, Los Angeles 57.

Medical Dates Bulletin

February 15—**California Society of Anesthesiologists** House of Delegates Meeting. Hilton Inn, International Airport, San Francisco. 9:00 a.m. Contact: Mr. Norman R. Catron, executive secretary, 39 N. San Mateo Drive, San Mateo.

February 15-17—**American College of Physicians** Southern California Regional Meeting. Hotel Del Coronado, Coronado. Contact: George C. Griffith, M.D., Governor for Southern California, A.C.P., P.O. Box 25, 1200 North State Street, Los Angeles 33.

February 16-17—**Los Angeles County Medical Association,** 8th Spring Postgraduate Meeting. Statler Hilton

Hotel, Los Angeles. Contact: T. W. McIntosh, M.D., 686 E. Union St., Pasadena.

February 19—**Arthritis and Rheumatism Foundation, Southern California Chapter,** Medical Symposium on Arthritis. Ambassador Hotel, Los Angeles. 8:00 p.m. Contact: Jean Reid, Arthritis Foundation, 8576 Wilshire Boulevard, Beverly Hills.

February 21-24—**Western Society of Electroencephalography** Nineteenth Annual Meeting. El Mirador Hotel, Palm Springs. Contact: Leslie B. Mann, M.D., secretary-treasurer, 1720 New Jersey Street, Los Angeles 33.

February 27—**Los Angeles County Heart Association,** Midwinter Symposium on Heart Disease. Joint Meeting with American College of Cardiology. Ambassador Hotel, Los Angeles, 9:00 a.m.-4:00 p.m. Contact: Mr. Chauncey A. Alexander, executive director, 2405 W. 8th St., Los Angeles 57.

February 28-March 3—**American College of Cardiology** 13th Annual Convention. Joint meeting with Los Angeles County Heart Association. Ambassador Hotel, Los Angeles. Contact: Philip Reichert, M.D., executive director, Empire State Building, 350 - 5th Ave., New York 1.

March 2—**San Diego County Medical Society and San Diego Academy of General Practice.** General Medical Symposium. El Cortez Hotel, San Diego, Saturday, 8:30 a.m.-5:00 p.m. Contact: M. J. Feeney, M.D., Postgraduate Medical Education Committee, 3415 Sixth Avenue, San Diego.

March 3-7—**Loma Linda University School of Medicine Alumni Postgraduate Convention.** Refresher Courses: March 3-4, 8:00 a.m.-12 noon; 2:00 p.m.-5:00 p.m., White Memorial Medical Center. Scientific Assembly: March 5-7, Ambassador Hotel. Contact: Jack Hallatt, M.D., general chairman, 316 N. Bailey St., Los Angeles 33.

March 12-13—**Tuberculosis and Health Association of Los Angeles County** Ninth Biennial Chest Disease Symposium. Sheraton-West Hotel, Los Angeles. Contact: Joseph F. Boyle, M.D., 1670 Beverly Boulevard, Los Angeles 26.

March 15-16—**Pioneers Memorial Hospital, Brawley** 13th Annual Postgraduate Medical and Surgical Assembly. Program presented by Mayo Clinic. Contact: Wayne E. Garrett, M.D., 528 G Street, Brawley.

March 21-22—**International College of Applied Nutrition,** Third Annual Convention. Huntington-Sheraton Hotel, Pasadena. Contact: Donald C. Collins, M.D., international secretary-general, 7046 Hollywood Blvd., Suite 503, Hollywood 28.

March 23—**California Society of Anesthesiologists,** Annual Meeting, House of Delegates. Chapman Park Hotel, Los Angeles. 9:00 a.m. Contact: Robert E. Ploss, M.D., secretary-treasurer, 39 N. San Mateo Dr., San Mateo.

March 23-27—**California Medical Association Annual Session.** Ambassador Hotel, Los Angeles. House of Delegates convenes March 23. Scientific Program begins March 24. Contact: Mr. John Hunton, executive secretary, California Medical Association, 693 Sutter Street, San Francisco 2.

March 29-30—**West Valley Community Hospital** Second Annual Scientific Assembly. Sportsman's Lodge, North Hollywood, Friday afternoon and Saturday Fee: $20. Contact: Chairman of Scientific Assembly, West Valley Community Hospital, 533 Balboa Blvd., Encino.

March 30—**Palo Alto Medical Clinic** Annual Clinic Day. Contact: R. Hewlett Lee, M.D., Palo Alto Medical Clinic, 300 Homer Avenue, Palo Alto.

April 1-4—**American Radium Society.** Mark Hopkins Hotel, San Francisco. Contact: Justin J. Stein, M.D., secretary, UCLA Medical Center, Los Angeles 24.

April 4-6—**Tuberculosis and Health Association of California** and California Thoracic Society Annual Meeting. Villa Hotel, San Mateo. Contact: Mr. William W. Phreaner, coordinator, Public Relations, 130 Hayes St., San Francisco 2.

April 21-25—**International College of Surgeons' North American Federation.** Ambassador Hotel, Los Angeles. Contact: William F. James, M.D., executive director, 1615 Lake Shore Drive, Chicago 10, Ill.

April 22-24—**American Academy of Pediatrics,** Spring Session. Statler Hilton Hotel, Los Angeles. Contact: W. J. Becker, business manager, 1801 Hinman Avenue, Evanston, Ill.

April 29-May 2—**Aerospace Medical Association.** Statler Hilton Hotel, Los Angeles. Contact: William J. Kennard, M.D., Washington National Airport, Washington 1, D. C.

May 20-23—**American Proctologic Society.** St. Francis Hotel, San Francisco. Contact: Norman D. Nigro, M.D., secretary, 7815 East Jefferson, Detroit 14, Michigan.

May 28-30—**American Public Health Association, Western Branch,** 30th Annual Meeting. Hotel Westward Ho, Phoenix, Arizona. Contact: Mr. Robert Mytinger, director, 693 Sutter Street, San Francisco 2.

May 29—**American Society for Gastrointestinal Endoscopy.** Fairmont Hotel, San Francisco. Contact: Frank B. McGlone, secretary-treasurer, 701 East Colfax, Denver 3, Colorado.

May 30-June 1—**American Gastroenterological Association.** Fairmont Hotel, San Francisco. Contact: Wade Volwiler, M.D., Department of Medicine, University of Washington, Seattle.

June 1—**General Hospital Ventura County,** Postgraduate Seminar. Contact: R. A. Blossom, M.D., director of laboratories, 3291 Loma Vista Road, Ventura.

June 9—**Southern California Chapter of American Academy of Pediatrics** Annual Meeting. Statler Hotel, Los Angeles, 10:00 a.m. Contact: Stephen Royce, M.D., Childrens Clinic, 504 South Sierra Madre Blvd., Pasadena.

September 25-26—**American Medical Association** Congress on Occupational Health. Jack Tar Hotel, San Francisco. Contact: Henry F. Howe, M.D., secretary, Council on Occupational Health, A.M.A., 535 North Dearborn Street, Chicago, Ill.

October 17-20—**Academy of Psychosomatic Medicine.** Sheraton-Palace Hotel, San Francisco. Contact: Klaus Berblinger, M.D., program chairman, Langley Porter Neuropsychiatric Institute, University of California Medical College, San Francisco 22.

October 24-25—**American Association for the Surgery of Trauma.** Mark Hopkins Hotel, San Francisco. Contact: William T. Fitts, Jr., M.D., secretary, 3400 Spruce Street, Philadelphia, Pennsylvania.

October 27-November 1—**American College of Surgeons** (Sectional Meeting). San Francisco. Contact: John Paul North, director, American College of Surgeons, 40 East Erie, Chicago 11, Illinois.

92nd annual session

CALIFORNIA MEDICAL ASSOCIATION

Ambassador Hotel * Los Angeles

March 23 to 27, 1963

*

Scientific Sessions
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CALIFORNIA MEDICAL ASSOCIATION

Ninety-second Annual Session

Ambassador Hotel
LOS ANGELES
March 23 to 27*
1963

***House of Delegates Opening Meeting March 23 7:00 p.m.**

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COMMISSION ON CANCER
CALIFORNIA MEDICAL ASSOCIATION

PRE-CONVENTION CONFERENCES

Los Angeles • Saturday, March 23, 1963

AMBASSADOR HOTEL

Radiology

Regency Room, Lobby Floor

Chairman, A. K. BRINEY, M.D., Whittier

THERAPY SESSION—9:30 a.m. to 11:30 a.m.

Cases with specific therapy problems will be presented. The audience is asked to participate actively.

DIAGNOSTIC SESSION—1:30 p.m. to 3:30 p.m.

Diagnostic cases with histories and films will be presented. Cases have been selected to illustrate specific problems in the radiological and clinical diagnosis of cancer. Audience participation and discussion are urgently requested.

Pathology

9:00 a.m. to Noon • 2:00 p.m. to 4:30 p.m.

Venetian Rooms, Lobby Floor

Moderator: JAMES REAGAN, M.D., Cleveland, Ohio

This Pre-Convention Conference on Cytology will be conducted under the chairmanship of D. A. De Santo, M.D., San Diego.

Those who wish slides and protocols for the conference (cost $25.00) are requested to register with Weldon K. Bullock, M.D., Registrar, Tumor Tissue Registry, C.M.A. Cancer Commission, Los Angeles County Hospital, 1200 N. State Street, Los Angeles 33. The $25 fee includes registration. For those who wish to attend the conference the fee is $25. There is no charge for residents and interns.

4:45 p.m.

Semi-annual meeting of California Society of Pathologists, Ernest E. Simard, M.D., Salinas, presiding.

7:00 p.m.

Dinner meeting of the California Society of Pathologists.

Other Meetings and Entertainment

- **SATURDAY, MARCH 23**

C.M.A. HOUSE OF DELEGATES OPENING SESSION—Embassy Room, 7:00 p.m.

C.M.A. Cancer Commission Conferences on Radiology and Pathology—Venetian Rooms, Pathology; Regency Room, Radiology; 9:00 a.m. to 4:30 p.m.

California Society of Pathology—Venetian Rooms, Semiannual Meeting, 4:45 p.m.

C.M.A. Committee on Disaster Medical Care Symposium—Embassy Room Foyer.

- **SUNDAY, MARCH 24**

PRESIDENTS' RECEPTION AND DINNER DANCE—Reception, 7 p.m., Venetian Rooms; Dinner Dance, Cocoanut Grove, Ambassador Hotel, 8:00 p.m. Formal dress optional. Honoring the Presidents of the California Medical Association and the Woman's Auxiliary. Tickets on sale in the Main Floor Lobby.

C.M.A. Section on Allergy and California Society of Allergy Luncheon—Lido Room, 12:30 p.m.

Pediatricians' Luncheon—Grove Lounge, 12:30 p.m.

Los Angeles Dermatological Society Clinical Meeting—Good Hope Clinic, 1241 Shatto St., 2:00 p.m.

AMPAC Rally—Gold Room, Chapman Park Hotel (Just across Wilshire Boulevard), 4:00 p.m.

- **MONDAY, MARCH 25**

C.M.A. Section on Obstetrics and Gynecology Luncheon and Business Meeting—Cocoanut Grove, 12:30 p.m.

A.M.A. Delegates Meeting—Convention Center Lounge, Casino Floor, 2:00 p.m.

Bureau of Medical Economics—Garden Room, Lobby Floor, 9:00 a.m.-5:00 p.m.

***California Medicine* Editorial Board Luncheon**—Dolphin Court, 12:15 p.m.

- **TUESDAY, MARCH 26**

Past Presidents' Luncheon—Frenchette Room, Noon.

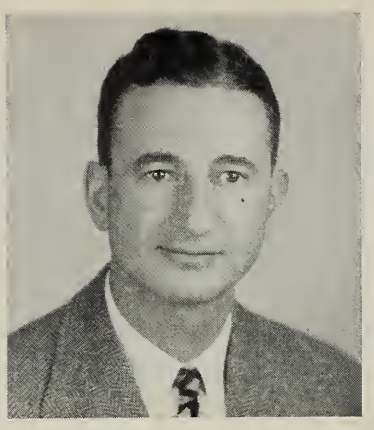
announcement:

THE COMMITTEE ON DISASTER MEDICAL CARE OF THE CALIFORNIA MEDICAL ASSOCIATION WILL HOLD A

symposium

on MEDICAL PREPAREDNESS AND DEFENSE
against BIOLOGICAL AND CHEMICAL WARFARE
Saturday 2:00 p.m. ★ March 23, 1963
in the
EMBASSY ROOM FOYER ★ AMBASSADOR HOTEL ★ LOS ANGELES

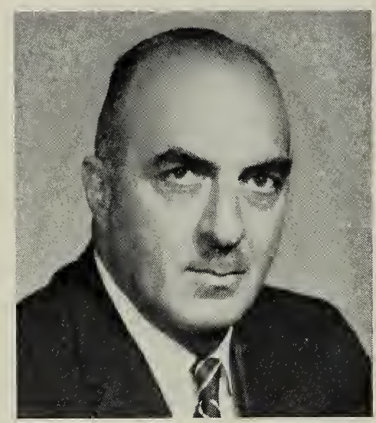
FRANK F. SCHADE, *program chairman*



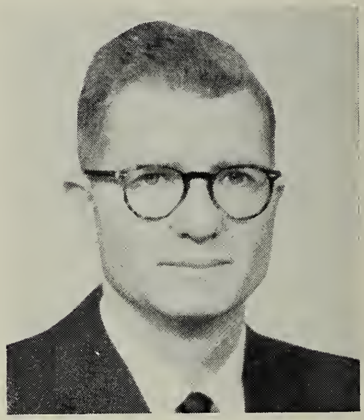
STEFAN S. FAJANS

Guest Speakers

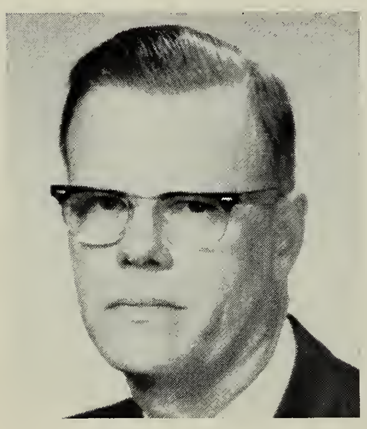
MELVIN M. GRUMBACH



GEORGE J. HAMWI



JAMES D. HARDY



CHARLES W. LLOYD

- STEFAN S. FAJANS, M.D., Professor of Internal Medicine, Division of Endocrinology and Metabolism, University of Michigan Medical Center, Ann Arbor.

- MELVIN M. GRUMBACH, M.D., Associate Professor of Pediatrics, College of Physicians and Surgeons of Columbia University, New York.

- GEORGE J. HAMWI, M.D., Professor of Medicine (Endocrinology), Director, Division of Endocrinology and Metabolism, Director of Clinical Research, Ohio University College of Medicine, Columbus; and President of the Ohio State Medical Association.

- JAMES D. HARDY, M.D., Professor and Chairman of the Department of Surgery; and Director of Surgical Research, Surgeon-in-Chief to the University Hospital, University of Mississippi Medical Center, Jackson.

- CHARLES W. LLOYD, M.D., Senior Scientist; Director of the Training Program of Reproductive Physiology and Director of the Endocrine Research Clinic, Worcester Foundation for Experimental Biology, Shrewsbury, Massachusetts.

Guest Speakers

BASIC SCIENCE SESSION

- HAROLD A. HARPER, Ph.D., Professor of Biochemistry, University of California School of Medicine, San Francisco.

- I. W. MONIE, M.B., Ch.B., (Glas.), Professor of Anatomy, University of California School of Medicine, San Francisco.

- NORMAN KRETCHMER, M.D., Professor of Pediatrics, Stanford University School of Medicine, Palo Alto.

- JOSEPH D. FELDMAN, M.D., Division of Experimental Pathology, Scripps Clinic and Research Foundation, La Jolla.

Special Guests of Sections

OBSTETRICS & GYNECOLOGY

- JAMES W. REAGAN, M.D., Professor of Pathology, Western Reserve University Institute of Pathology, Cleveland, Ohio. (Guest of California Medical Association Cancer Commission.)

ALLERGY

- ADOLPH ROSTENBERG, Jr., M.D., Department of Dermatology, University of Illinois College of Medicine, Chicago, Illinois.

PRESIDENTS'
Dinner-Dance

SUNDAY, MARCH 24, 1963 ■ 8:00 P.M.

COCOANUT ROOM ■ AMBASSADOR HOTEL

Reception

VENETIAN ROOMS ■ 7:00 P.M.

Formal dress optional

Tickets will be on sale in the Main Lobby

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Information

BADGES. It is important that badges be worn at all times. Admission to scientific meetings is by badge only.

COUNCIL. The first meeting of the Council will be held Saturday, March 23 at 9:30 a.m. in the Colonial Room. Further meetings will be held each morning at 7:30 a.m. in the Frenchette Room.

DELEGATES. For list of delegates, meeting times, places and agenda, see pages 45 to 53.

EMERGENCY CALLS AND MESSAGES. Convention Emergency Call Number: DUnkirk 1-2191—8:30 a.m. to 5:00 p.m.

MESSAGE CENTER (DUnkirk 1-2191)—*Provided through the courtesy of the Pacific Telephone and Telegraph Company*—Registration Desk, Ballroom, Casino Floor—Open 8:30 a.m. to 5:00 p.m.—The Association will *attempt* to transmit messages to the individual physician. Each physician should notify his own office of the exact times and meetings he plans to attend, and the convention number.

EXHIBITS. Technical Exhibits—Ballroom, Sunset Room and Boulevard Room, Casino Floor. See pages 136 to 144.

Motion Picture Symposia will be shown in the Colonial Room. See program synopsis, page 34.

You are urged to visit and attend all exhibits.

MEETING TIMES AND PLACES. See chart on page 11 for exact times and places of general and section meetings.

REGISTRATION. Registration and information desks are located in the Ballroom Foyer, Casino Floor. *All members, guests, and visitors are requested to register immediately on arrival.* There is no charge for registration. Registration desks are open Saturday through Wednesday. *Admission to the general and section sessions and exhibits areas is by badge only.*

QUALIFICATIONS/REQUIREMENTS FOR REGISTRATION. (a) All M.D.'s with credentials showing that they hold valid license to practice medicine. (Membership card in C.M.A.; county medical society/association or A.M.A. membership card.) (b) Medical students will be admitted upon presentation of credentials from their medical schools identifying them as medical students. (A membership card of the Student American Medical Association or letter from their dean's office.) (c) Medical secretaries will be admitted upon presentation of a letter from the physician-employer. (d) Pharmacist mates and other military personnel of a like grade will be admitted upon presentation of a letter requesting their admittance, written by their commanding officer. (e) Dentists (D.D.S.), doctors of veterinary medicine (D.V.M.), registered nurses (R.N.), student nurses, x-ray technicians, laboratory technicians, allied public health personnel, and others will be admitted provided they have proper identification. (f) *All questions on admission will be passed upon by a member of the Committee on Registration who will be present at the desk.*

C.M.A. ANNUAL MEETING—1963 SCIENTIFIC SESSIONS

LOCATION AMBASSADOR HOTEL	Sunday, March 24		Monday, March 25		Tuesday, March 26		Wednesday, March 27	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Embassy Room Lobby Floor						**Afternoon*** **House of Delegates**	**9:30 a.m.** **House of Delegates**	
East Venetian Room Lobby Floor	**9:30 a.m.** Pediatrics Internal Medicine Obstetrics and Gynecology General Practice	**2:00 p.m.** General Meeting ——— Symposium on the Adrenal Cortex	**9:30 a.m.** Industrial Medicine, Physical Medicine, General Practice	**2:00 p.m.** General Meeting ——— Symposium on the Pancreas and Panel on Diabetes	**9:30 a.m.** General Meeting ——— Problems of Gonadal Function Spotlight on Medicine		**9:30 a.m.** Psychiatry and Neurology	**2:00 p.m.** Psychiatry and Neurology Pediatrics Preventive Medicine and Public Health
West Venetian Room Lobby Floor	**9:30 a.m.** General Surgery		**9:30 a.m.** Internal Medicine				**9:30 a.m.** Internal Medicine	
Lido Room Lobby Floor	**9:30 a.m.** Allergy	**12 Noon** Allergy Luncheon and Business Meeting			**9:30 a.m.** Urology	**2:00 p.m.** Urology	**9:30 a.m.** Preventive Medicine and Public Health	
Regency Room Lobby Floor	**9:30 a.m.** Radiology	**2:00 p.m.** Radiology		**2:00 p.m.** Physical Medicine		**2:00 p.m.** Basic Sciences		
Frenchette Room Lobby Floor	**9:30 a.m.** Orthopedics	**2:00 p.m.** Eye						
Colonial Room Lobby Floor	**9:30 a.m.** Pathology	**Film Symposia** **12:15 p.m.** Eye **2:00 p.m.** Orthopedics **3:30 p.m.** Isotopes—Radiations	**Film Symposia** **9:30 a.m.** Surgery **11:00 a.m.** Proctology	**Film Symposia** **2:00 p.m.** Clinical Electronics **3:30 p.m.** Medicine in Space	**Film Symposia** **9:30 a.m.** Obstetrics and Gynecology **11:00 a.m.** Urology	**Film Symposia** **2:00 p.m.** Endocrinology **3:30 p.m.** Pediatrics—Mental Development	**Film Symposia** **9:00 a.m.** Coronary Disease **11:00 a.m.** Vascular Surgery	**Film Symposia** **2:00 p.m.** Thoracic Surgery **3:30 p.m.** Neurology Neurosurgery
Grove Lounge Lobby Floor	**9:30 a.m.** Anesthesiology	**12:30 p.m.** Pediatrics Luncheon						
Rose Room Lobby Floor	**9:30 a.m.** Ear, Nose & Throat							
Cocoanut Grove Lobby Floor			**12 Noon** Ob./Gyn. Luncheon	**2:00 p.m.** Obstetrics and Gynecology				
CHAPMAN PARK HOTEL Gold Room	**9:30 a.m.** Dermatology							

TECHNICAL EXHIBITS—Sunset Room, Ballroom and Boulevard Room, Casino Floor

***Time to be announced at Opening Session Saturday Evening, 7:00 p.m., March 23**

COUNCIL OF THE C.M.A.—Meets Saturday, 9:30 a.m., Colonial Room, and Daily at 7:30 a.m. in the Frenchette Room

SCIENTIFIC SESSIONS • General Meetings

FIRST GENERAL MEETING

SUNDAY, MARCH 24 2:00 p.m.—Venetian Rooms, Lobby Floor

Adrenal Cortical Dysfunction

Moderator: R. Bruce Henley, M.D., Oakland

2:00—**Dysfunction of Adrenal Cortical Activity: Diagnosis and Treatment**—Peter H. Forsham, M.D., San Francisco.

2:45—**Congenital Virilizing Adrenal Hyperplasia**—Melvin M. Grumbach, M.D., New York, N. Y., by invitation.

3:30—**Surgical Problems of the Adrenal Cortex**—James D. Hardy, M.D., Jackson, Mississippi, by invitation.

4:15—**Regulation of Aldosterone Secretion**—Stefan S. Fajans, M.D., Ann Arbor, Michigan, by invitation.

SECOND GENERAL MEETING

MONDAY, MARCH 25 2:00 p.m.—Venetian Rooms, Lobby Floor

Pancreas—Endocrine Dysfunction

Moderator: Glenn A. Pope, M.D., Sacramento

2:00—**Advances in Differential Diagnosis of Spontaneous Hypoglycemia**—Stefan S. Fajans, M.D., Ann Arbor, Michigan, by invitation.

2:40—**Islet Cell Tumors of All Types**—James D. Hardy, M.D., Jackson, Mississippi, by invitation.

3:15—**Amino Acid and Alpha-Keto Acid-Induced Hyperinsulinism in Leucine-Sensitive Type of Infantile and Childhood Hypoglycemia**—Melvin M. Grumbach, M.D., New York, N. Y., by invitation.

3:30— **Panel Discussion**

Diabetes Mellitus

Moderator: Laurance W. Kinsell, M.D., Oakland

Members of the Panel: George J. Hamwi, M.D., Columbus, Ohio, by invitation, Stefan S. Fajans, M.D., Ann Arbor, Michigan, by invitation, Peter H. Forsham, M.D., San Francisco, and by invitation Josiah Brown, M.D., Los Angeles.

THIRD GENERAL MEETING

TUESDAY, MARCH 26 9:30 a.m.—Venetian Rooms, Lobby Floor

Gonadal Dysfunction

Moderator: R. Bruce Henley, M.D., Oakland

9:30—**Failure of Ovarian Function**—Charles W. Lloyd, M.D., Shrewsbury, Massachusetts, by invitation.

10:00—**Primary Testicular Failure**—George J. Hamwi, M.D., Columbus, Ohio, by invitation.

10:30— California Medical Association
Spotlight on Medicine 1963

10:30—**Gestagens**—Charles W. Lloyd, M.D., Shrewsbury, Massachusetts, by invitation.

11:00—**Nonspecific Anti-Inflammatory Agents: Their Therapeutic Application, Especially in Rheumatic Diseases**—Edward W. Boland, M.D., Los Angeles.

11:30—**Fibrinolysis in the Human Organism**—Jack Lieberman, M.D., Los Angeles.

BASIC SCIENCES

TUESDAY, MARCH 26 2:00 p.m.—Regency Room, Lobby Floor

Basic Science Session

Moderator: Glenn A. Pope, M.D., Sacramento

2:00—**Recent Studies on Protein Synthesis with Implications in Clinical Medicine**—Harold A. Harper, Ph.D., San Francisco, by invitation.

2:30—**The Influence of the Environment on the Unborn**—I. W. Monie, M.B., Ch.B. (Glas.), San Francisco, by invitation.

3:00—**Inherited Abnormalities of the Metabolism of Drugs**—Norman Kretchmer, M.D., Palo Alto, by invitation.

3:30—**The Role of Lymphoid Cells in Transplantation Immunity**—Joseph D. Feldman, M.D., La Jolla, by invitation.

QUALIFICATIONS/REQUIREMENTS FOR REGISTRATION

(a) All M.D.'s with credentials showing that they hold valid license to practice medicine. (Membership card in C.M.A.; component medical society/association or A.M.A. membership card.)

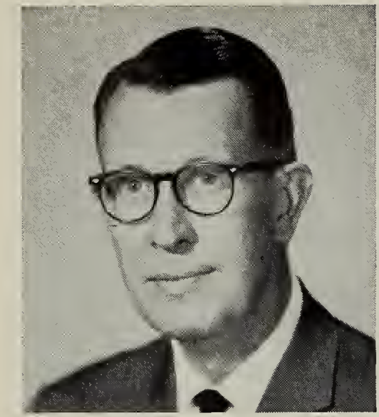
(b) Medical students will be admitted upon presentation of credentials from their medical schools identifying them as medical students. (A membership card of the Student American Medical Association or letter from their dean's office.)

(c) Medical secretaries will be admitted upon presentation of a letter from the physician employer.

(d) Pharmacist mates and other military personnel of a like grade will be admitted upon presentation of a letter requesting their admittance, written by their commanding officer.

(e) Dentists (D.D.S.), doctors of veterinary medicine (D.V.M.), registered nurses (R.N.), student nurses, x-ray technicians, laboratory technicians, dietitians, allied public health personnel, and others will be admitted provided they have proper identification.

(f) All questions on admission will be passed upon by a member of the Committee on Registration who will be present at the desk.



GLENN A. POPE
Chairman

HARNEY M. CORDUA, JR.
Secretary

INTERNAL MEDICINE

Chairman.................Glenn A. Pope, M.D., Sacramento
Secretary............Harney M. Cordua, Jr., M.D., San Diego
Assistant Secretary.....James H. Thompson, M.D., San Francisco

SUNDAY, MARCH 24 9:30 a.m.—East Venetian Room, Lobby Floor

Joint Meeting with Sections on Obstetrics and Gynecology, Pediatrics and General Practice

Endocrinology

Moderator: Henry S. Richanbach, M.D., Burlingame

9:30—**General Medical Uses of Steroids**—Peter H. Forsham, M.D., San Francisco.

10:00—**Abnormalities of Sex Differentiation and Sex Determination**—Melvin M. Grumbach, M.D., New York City, by invitation.

10:50—**Hormonal Regulation of Lipid Metabolism**—Laurance W. Kinsell, M.D., Oakland.

11:20—**Central Nervous System Control of Endocrine Function**—Charles W. Lloyd, M.D., Shrewsbury, Massachusetts, by invitation.

11:50—**The Preparation and Use of Human Growth Hormone**—Willard VanderLaan, M.D., La Jolla.

12:30—**Adjourn.**

SUNDAY, MARCH 24 2:00 p.m.—Venetian Rooms, Lobby Floor

First General Meeting

Adrenal Cortical Dysfunction

Moderator: R. Bruce Henley, M.D., Oakland

For Program, see General Meetings

MONDAY, MARCH 25
9:30 a.m.—West Venetian Room, Lobby Floor

Endocrinology

Moderator: Glenn A. Pope, M.D., Sacramento

9:30—**Significance of the Early Recognition of the Diabetic State**—Stefan S. Fajans, M.D., Ann Arbor, Michigan, by invitation.

10:00—**Management of the Obese Pre-Diabetic**—Peter H. Forsham, M.D., San Francisco.

10:30—**The Diabetic Diet—Newer Concepts**—Laurance W. Kinsell, M.D., Oakland.

11:00—**Business Meeting.**

11:10—**Metabolic and Therapeutic Studies on Acromegaly**—J. L. Born, M.D., Berkeley, by invitation.

11:40—**Recent Advances in Thyroid Disease**—George J. Hamwi, M.D., Columbus, Ohio, by invitation.

12:10—**Estrogens in Cardiovascular Disease**—Jessie Marmorston, M.D., Los Angeles.

INTERNAL MEDICINE (Cont.)

MONDAY, MARCH 25 2:00 p.m.—Venetian Rooms, Lobby Floor

Second General Meeting

2:00— Pancreas—Endocrine Dysfunction

Moderator: Glenn A. Pope, M.D., Sacramento

3:30— **Panel Discussion**

Diabetes Mellitus

Moderator: Laurance W. Kinsell, M.D., Oakland

For Program, see General Meetings

TUESDAY, MARCH 26 9:30 a.m.—Venetian Rooms, Lobby Floor

Third General Meeting

9:30— Gonadal Dysfunction

Moderator: R. Bruce Henley, M.D., Oakland

10:30— California Medical Association
Spotlight on Medicine 1963

For Program, see General Meetings

TUESDAY, MARCH 26 2:00 p.m.—Regency Room, Lobby Floor

Basic Science Session

Moderator: Glenn A. Pope, M.D., Sacramento

For Program, see General Meetings

WEDNESDAY, MARCH 27
9:30 a.m.—West Venetian Room, Lobby Floor

Moderator: Glenn A. Pope, M.D., Sacramento

9:30—Interesting Conditions Causing Hypercalcemia—Telfer B. Reynolds, M.D., Los Angeles.

10:00—Osteoporosis—J. E. Bethune, M.D., Los Angeles, by invitation.

10:30—Intermission.

10:35—Localized Epidemic of Coccidioidal Infection and Isolation of the Fungus from the Soil—William A. Winn, M.D., Springville.

11:00—The Role of Selective Cine Coronary Arteriography in Evaluation of Patients with Suspected Coronary Artery Disease—James A. McEachen, M.D., and Rodney T. Smith, M.D., Santa Monica.

11:30—The Management of Long-Term Anticoagulant Therapy—I. Myron Vigran, M.D., Beverly Hills.

12:00—Clinical and Pharmacodynamic Studies on Alpha Methyl Dopa for the Treatment of Hypertension—Max Harry Weil, M.D., Los Angeles.

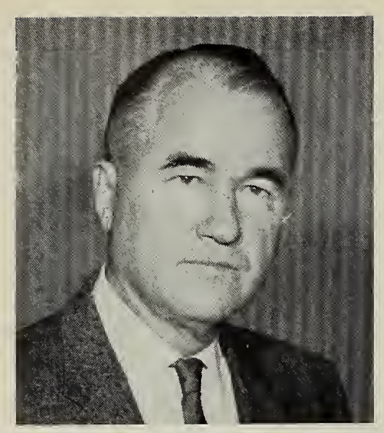
EMERGENCY CALLS AND MESSAGES

CONVENTION EMERGENCY CALL NUMBER

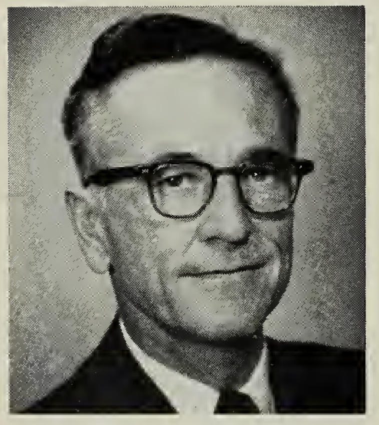
DUnkirk 1-2191

8:30 a.m. to 5:00 p.m.

MESSAGE CENTER (DUnkirk 1-2191) — *Provided through the courtesy of the Pacific Telephone and Telegraph Company*—Registration Desk, Ballroom, Casino Floor—Open 8:30 a.m. to 5:00 p.m.—The Association will *attempt* to transmit messages to the individual physician. Each physician should notify his own office of the exact times and meetings he plans to attend, and the convention number.



R. BRUCE HENLEY
Chairman



FREDERIC P. SHIDLER
Secretary

GENERAL SURGERY

Chairman . . . . R. Bruce Henley, M.D., Oakland
Secretary . . . . Frederic P. Shidler, M.D., Menlo Park
Assistant Secretary . . . . Harry E. Peters, M.D., Oakland

SUNDAY, MARCH 24
9:30 a.m.—West Venetian Room, Lobby Floor

9:30—**Carcinoid of the Appendix with Metastasis**—John H. Kieraldo, M.D., by invitation, and Stanton L. Eversole, M.D., Palo Alto.

9:45—**Nature of Gastric Ulcers Seen After Local Gastric Hypothermia**—Harvey N. Lippman, M.D., Joel F. Panish, M.D., and Leon Morgenstern, M.D., Los Angeles.

10:00— **Panel Discussion**

The Acute Abdomen

Moderator: J. Howard Payne, M.D., Los Angeles

Members of the Panel: Max R. Gaspar, M.D., Long Beach, Charles B. Canby, M.D., Van Nuys, and James S. Clarke, M.D., Los Angeles.

11:30—**Some Problems Associated with Gastric Surgery**—James D. Hardy, M.D., Jackson, Mississippi, by invitation.

12:00—**Business Meeting**—R. Bruce Henley, M.D., Oakland, Chairman.

SUNDAY MARCH 24 2:00 p.m.—Venetian Rooms, Lobby Floor

First General Meeting

Adrenal Cortical Dysfunction

Moderator: R. Bruce Henley, M.D., Oakland

For Program, see General Meetings

MONDAY, MARCH 25 2:00 p.m.—Venetian Rooms, Lobby Floor

Second General Meeting

2:00— Pancreas—Endocrine Dysfunction

Moderator: Glenn A. Pope, M.D., Sacramento

3:30— **Panel Discussion**

Diabetes Mellitus

Moderator: Laurance W. Kinsell, M.D., Oakland

For Program, see General Meetings

TUESDAY, MARCH 26 9:30 a.m.—Venetian Rooms, Lobby Floor

Third General Meeting

9:30— Gonadal Dysfunction

Moderator: R. Bruce Henley, M.D., Oakland

10:30— California Medical Association
Spotlight on Medicine 1963

For Program, see General Meetings

TUESDAY, MARCH 26 2:00 p.m.—Regency Room, Lobby Floor

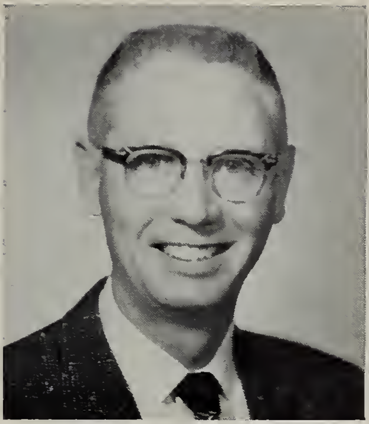
Basic Science Session

Moderator: Glenn A. Pope, M.D., Sacramento

For Program, see General Meetings

GENERAL PRACTICE

Chairman . . . . A. Norton Donaldson, Jr., M.D., Santa Ana
Secretary . . . . Herbert A. Holden, M.D., San Leandro
Assistant Secretary . . . . Merlin A. Hendrickson, M.D., Rialto



A. NORTON DONALDSON, JR.
Chairman

HERBERT A. HOLDEN
Secretary

SUNDAY, MARCH 24
9:30 a.m.—East Venetian Room, Lobby Floor

Joint Meeting with Sections on Internal Medicine, Pediatrics, and Obstetrics and Gynecology

9:30— Endocrinology

Moderator: Henry S. Richanbach, M.D., Burlingame

9:30—General Medical Uses of Steroids—Peter H. Forsham, M.D., San Francisco.

10:00—Abnormalities of Sex Differentiation and Sex Determination—Melvin M. Grumbach, M.D., New York City, by invitation.

10:50—Hormonal Regulation of Lipid Metabolism—Laurance W. Kinsell, M.D., Oakland.

11:20—Central Nervous System Control of Endocrine Function—Charles W. Lloyd, M.D., Shrewsbury, Massachusetts, by invitation.

11:50—The Preparation and Use of Human Growth Hormone—Willard VanderLaan, M.D., La Jolla.

SUNDAY, MARCH 24 2:00 p.m.—Venetian Rooms, Lobby Floor

First General Meeting

2:00— Adrenal Cortical Dysfunction

Moderator: R. Bruce Henley, M.D., Oakland

For Program, see General Meetings

MONDAY, MARCH 25
9:30 a.m.—East Venetian Room, Lobby Floor

Joint Meeting with Sections on Industrial Medicine and Physical Medicine

Symposium

Injuries and Diseases of the Neck and Shoulder

Moderator: J. Blair Pace, M.D., Oceanside

9:30—The Problem as Presented to the Insurance Industry—Gordon Snow, LL.B., Los Angeles, by invitation.

10:00—The Problem as Seen from the Orthopedic Viewpoint—Harold E. Crowe, M.D., Los Angeles.

10:30—Neurosurgical Considerations: A New Explanation of the Pain Mechanisms—Benjamin L. Crue, Jr., M.D., Arcadia.

QUALIFICATION REQUIREMENTS FOR REGISTRATION

(a) All M.D.'s with credentials showing that they hold valid license to practice medicine. (Membership card in C.M.A., component medical society/association or A.M.A. membership card.)

(b) Medical students will be admitted upon presentation of credentials from their medical schools identifying them as medical students. (A membership card of the Student American Medical Association or letter from their dean's office.)

(c) Medical secretaries will be admitted upon presentation of a letter from the physician employer.

(d) Pharmacist mates and other military personnel of a like grade will be admitted upon presentation of a letter requesting their admittance, written by their commanding officer.

(e) Dentists (D.D.S.), doctors of veterinary medicine (D.V.M.), registered nurses (R.N.), student nurses, x-ray technicians, laboratory technicians, dietitians, allied health personnel, and others will be admitted provided they have proper identification.

(f) *All questions on admission will be passed upon by a member of the Committee on Registration who will be present at the desk.*

GENERAL PRACTICE (Con't)

11:00—**The Physical Medicine Approach**—Ralph E. Worden, M.D., Los Angeles.

11:30—**Questions and Answers.**

Rear Portion of East Venetian Room

12:00—**Business Meeting.**

MONDAY, MARCH 25 2:00 p.m.—Venetian Rooms, Lobby Floor

Second General Meeting

2:00— Pancreas—Endocrine Dysfunction
Moderator: Glenn A. Pope, M.D., Sacramento

3:30— **Panel Discussion**

Diabetes Mellitus
Moderator: Laurance W. Kinsell, M.D., Oakland
For Program, see General Meetings

TUESDAY, MARCH 26 9:30 a.m.—Venetian Rooms, Lobby Floor

Third General Meeting

9:30— Gonadal Dysfunction
Moderator: R. Bruce Henley, M.D., Oakland

10:30— California Medical Association
Spotlight on Medicine 1963
For Program, see General Meetings

TUESDAY, MARCH 26 2:00 p.m.—Regency Room, Lobby Floor

2:00— Basic Science Session
Moderator: Glenn A. Pope, M.D., Sacramento
For Program, see General Meetings

PRESIDENTS'
Dinner-Dance

SUNDAY, MARCH 24, 1963 ▪ 8:00 P.M.

COCOANUT ROOM ▪ AMBASSADOR HOTEL

Reception

VENETIAN ROOMS ▪ 7:00 P.M.

Formal dress optional

Tickets will be on sale in the Main Lobby

ALLERGY

Chairman . . . . Jerome J. Sievers, M.D., Sherman Oaks
Secretary . . . . Walter R. MacLaren, M.D., Pasadena
Assistant Secretary . . . . Leo R. Melcher, M.D., Redwood City

JEROME J. SIEVERS
Chairman

WALTER R. MACLAREN
Secretary

SUNDAY, MARCH 24 9:30 a.m.—Lido Room, Lobby Floor

9:30—**The Current Status of Hypnosis in Treating Asthma and Allergy**—William S. Kroger, M.D., Beverly Hills.

9:50—**Deaths in Children from Acute Asthma: Experience at the Childrens Hospital, Los Angeles, from 1937 to 1962**—Warren Richards, M.D., Los Angeles.

10:10—**Electrostatic Filtration of Air as an Aid in the Treatment of Inhalant Allergy**—Willard S. Small, M.D., Pasadena.

10:30—**Newer Concepts Regarding Drug Reactions**—Adolph Rostenberg, Jr., M.D., Chicago, by invitation.

11:00—**Haptene Inhibition of the Antigen-Antibody Reaction**—Arthur Malley, Ph.D., Pasadena, by invitation.

11:20—**Neutralization in Monkeys Sensitized by Cross-Reacting Human Allergy Sera**—Laurence L. Layton, Ph.D., Albany, by invitation.

11:40—**Atopic Antibodies: Identification and Measurement**—Mathea Allansmith, M.D., Palo Alto, by invitation.

12:00—**Recess.**

12:30—**Luncheon and Business Meeting**—Sponsored jointly by the Section on Allergy and the California Society of Allergy.

REGISTRATION

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GRANT FLETCHER
Chairman

JAMES S. WEST
Secretary

ANESTHESIOLOGY

Chairman . . . . Grant Fletcher, M.D., Monterey
Secretary . . . . James S. West, M.D., Los Angeles
Assistant Secretary . . . . . . Gordon C. Langsdorf, M.D., San Diego

SUNDAY, MARCH 24 9:30 a.m.—Grove Lounge, Lobby Floor

9:30—**Cause and Treatment of Acid-Base Imbalance in the Anesthetized Child**—John A. McConnell, M.D., Los Angeles, by invitation.

10:00—**The Effects of Spinal Anesthesia on the Fetal Electrocardiogram**—Howard S. Downs, M.D., Glendale, and by invitation P. Hapworth Morrison, M.D., and Marvin R. Wilcox, M.D., Los Angeles.

10:30—**Potassium Superoxide as an O_2 Source for Confined Environment**—Verne L. Brechner, M.D., Robert O. Bauer, M.D., and Robert F. Wolff, M.D., Los Angeles.

11:00—**Intravenous Ether Anesthesia**—Edmond I. Eger, II, M.D., San Francisco, Edward A. Johnson, M.D., San Pablo, and Louis W. Lewis, M.D., Berkeley.

11:30—**Business Meeting.**

EMERGENCY CALLS AND MESSAGES

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DERMATOLOGY

Chairman	David R. Taylor, M.D., Fresno
Secretary	Herbert L. Joseph, M.D., Vallejo
Assistant Secretary	William B. Reed, M.D., Burbank

DAVID R. TAYLOR
Chairman

SUNDAY, MARCH 24 9:30 a.m.—Chapman Park Hotel, Gold Room

The Mucous Membrane Diseases

9:30—**Inflammatory Mucous Membrane Lesions of the Male Genitalia**—William B. Reed, M.D., Burbank.

9:50—**Premalignant and Malignant Lesions of Oral Mucous Membrane: A Dermatologist's View on Diagnosis and Treatment**—S. William Levy, M.D., San Francisco.

10:10—**Pathology of Oral Mucous Membrane Lesions**—Francis V. Howell, D.D.S., San Diego, by invitation.

10:30—**Current Trends and Concepts of Syphilis**—George Schochet, M.D., San Francisco, by invitation.

10:50—**Recess.**

11:00— **Panel Discussion**

Therapeutic Headaches—Slide Presentation of Problem Cases

Moderator: David R. Taylor, M.D., Fresno

Panelists: Molleurus Couperus, M.D., Los Angeles, Norman Levan, M.D., Bakersfield, Norman Epstein, M.D., San Francisco, Walter E. Weber, M.D., Santa Rosa, Walter R. Nickel, M.D., San Diego, and Victor D. Newcomer, M.D., Los Angeles.

11:50—**Business Meeting.**

HERBERT L. JOSEPH
Secretary

SUNDAY, MARCH 24

2:00 p.m.—Good Hope Clinic, 1241 Shatto St., Los Angeles

CLINICAL MEETING—Sponsored by the Metropolitan Dermatological Society of Los Angeles and the Los Angeles Dermatological Society.

Guest Moderators:
Edmund L. Dubois, M.D., Beverly Hills
Allan G. Redeker, M.D., Los Angeles

BRING PROPER IDENTIFICATION
FOR REGISTRATION

HENRY L. HARRIS
Chairman

WILLIAM F. BAXTER
Secretary

EAR, NOSE AND THROAT

Chairman . . . . Henry L. Harris, M.D., Los Angeles
Secretary . . . . William F. Baxter, M.D., Los Altos
Assistant Secretary . . . . Irwin Harris, M.D., Los Angeles

SUNDAY, MARCH 24 9:30 a.m.—Rose Room, Lobby Floor

9:30—**Fracture of the Larynx**—Gordon McCoy, M.D., San Francisco, and by invitation William S. McAfee, M.D., San Francisco.
Discussion.

10:00—**Eosinophilic Granuloma of the Temporal Bone: A Case Report and Discussion of Similar Clinical Entities**—Thomas L. Soss, M.D., San Mateo.
Discussion.

10:30—**Cholesteatoma Behind Agenesis of the Ear Canal**—Irwin Harris, M.D., Los Angeles.
Discussion.

11:00—**Surgical Treatment of Malformation of the Auditory Mechanism**—Herbert K. Kossner, M.D., Sacramento.
Discussion.

11:30—**Implantation of the Cochlear Induction Coil, or Artificial Organ of Corti, for Total Neurosensory Hearing Loss**—Frederick M. Turnbull, Jr., M.D., John B. Doyle, Jr., M.D., and by invitation, James Doyle, Electronics Engineer, Los Angeles.

12:00—**Business Meeting.**

QUALIFICATIONS/REQUIREMENTS FOR REGISTRATION

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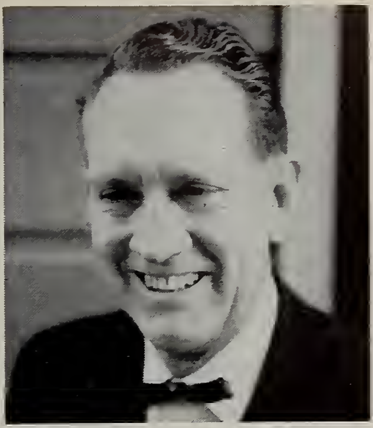
(f) All questions on admission will be passed upon by a member of the Committee on Registration who will be present at the desk.

EYE

Chairman . . . . Richard A. Westsmith, M.D., San Mateo
Secretary . . . . James F. Kleckner, M.D., Los Angeles
Assistant Secretary . . . . Byron H. Demorest, M.D., Sacramento



RICHARD A. WESTSMITH
Chairman

SUNDAY, MARCH 24 12:15 p.m.—Colonial Room, Lobby Floor

12:15— **Medical Motion Picture Symposium**

Chairman: Stacy R. Mettier, Jr., M.D., San Francisco

1:45—Coffee Break. Adjourn to Frenchette Room.

SUNDAY, MARCH 24 2:00 p.m.—Frenchette Room, Lobby Floor

2:00—The Problem of Glaucoma in the Negro—Caesar B. Piper, M.D., Los Angeles.
Discussion.

2:45—Present Status of Retrolental Fibroplasia—Captain J. M. Jordan, M.C., U.S.N., San Diego, by invitation.
Discussion.

3:30—Some Observations on the Evolution of Retinal Arteriolar and Venular Disease in Malignant Hypertension—Alan Harnish, M.D., and M. L. Pearce, M.D., Los Angeles.
Discussion.

4:15— **Panel Discussion**

Thyroid Problems in Ophthalmology

Moderator: George L. Tabor, M.D., San Diego

Members of the Panel: Jesshill Love, M.D., Santa Barbara, George J. Hamwi, M.D., Columbus, Ohio, by invitation, A. Ray Irvine, Jr., M.D., and Vernon D. Gray, M.D., Los Angeles, and Lt. Commander Fred E. Jackson, M.C., U.S.N., San Diego, by invitation.

5:00—Business Meeting.

JAMES F. KLECKNER
Secretary

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PETER L. HOFFMAN
Chairman

CARL E. NEMETHI
Secretary

INDUSTRIAL MEDICINE AND SURGERY

Chairman	Peter L. Hoffman, M.D., Los Angeles
Secretary	Carl E. Nemethi, M.D., Los Angeles
Assistant Secretary	C. Frederick Burton, M.D., Oakland

MONDAY, MARCH 25

9:30 a.m.—East Venetian Room, Lobby Floor

Joint Meeting with Sections on General Practice and Physical Medicine

Symposium

Injuries and Diseases of the Neck and Shoulder

Moderator: J. Blair Pace, M.D., Oceanside

9:30—The Problem as Presented to the Insurance Industry—Gordon Snow, LL.B., Los Angeles, by invitation.

10:00—The Problem as Seen from the Orthopedic Viewpoint—Harold E. Crowe, M.D., Los Angeles.

10:30—Neurosurgical Considerations: A New Explanation of the Pain Mechanisms—Benjamin L. Crue, Jr., M.D., Arcadia.

11:00—The Physical Medicine Approach—Ralph E. Worden, M.D., Los Angeles.

11:30—Questions and Answers.

12:00—Business Meeting.

PRESIDENTS'

Dinner-Dance

SUNDAY, MARCH 24, 1963 ▪ 8:00 P.M.

COCOANUT ROOM ▪ AMBASSADOR HOTEL

Reception

VENETIAN ROOMS ▪ 7:00 P.M.

Formal dress optional

Tickets will be on sale in the Main Lobby

OBSTETRICS AND GYNECOLOGY

Chairman . . . . Kenneth F. Morgan, Jr., M.D., Los Angeles
Secretary . . . . Leon P. Fox, M.D., San Jose
Assistant Secretary . . . . Ralph L. Hoffman, M.D., San Diego

KENNETH F. MORGAN, JR.
Chairman

LEON P. FOX
Secretary

SUNDAY, MARCH 24 9:30 a.m.—East Venetian Room, Lobby Floor

Joint Meeting with Sections on Internal Medicine, Pediatrics and General Practice

Endocrinology

Moderator: Henry S. Richanbach, M.D., Burlingame

9:30—**General Medical Uses of Steroids**—Peter H. Forsham, M.D., San Francisco.

10:00—**Abnormalities of Sex Differentiation and Sex Determination**—Melvin M. Grumbach, M.D., New York City, by invitation.

10:50—**Hormonal Regulation of Lipid Metabolism**—Laurance W. Kinsell, M.D., Oakland.

11:20—**Central Nervous System Control of Endocrine Function**—Charles W. Lloyd, M.D., Shrewsbury, Massachusetts, by invitation.

11:50—**The Preparation and Use of Human Growth Hormone**—Willard VanderLaan, M.D., La Jolla.

12:30—**Adjourn.**

MONDAY, MARCH 25 12:30 p.m.—Cocoanut Grove, Lobby Floor

12:30—**Luncheon and Business Meeting.**

MONDAY, MARCH 25 2:00 p.m.—Cocoanut Grove, Lobby Floor

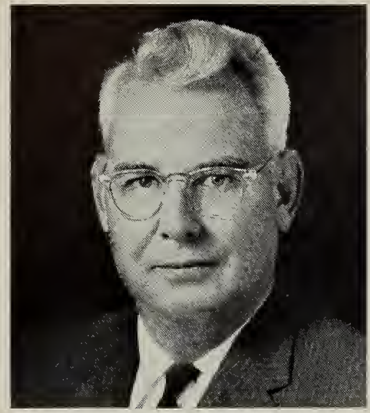
2:00—**Frigidity: The Emotional Plague**—William S. Kroger, M.D., Beverly Hills.
Discussion.

2:30—**The Hirsute Woman**—Charles W. Lloyd, M.D., Shrewsbury, Massachusetts, by invitation.
Discussion.

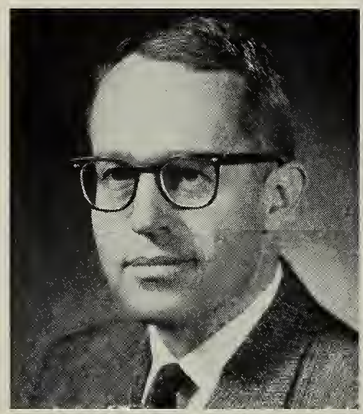
3:20—**Biopsy in Studying Disease of the Female Genital Tract: The Viewpoint of the Pathologist**—James W. Reagan, M.D., Cleveland, Ohio, by invitation.
Discussion.

4:00—**Congenital Absence of the Vagina—Diagnosis and Surgical Reconstruction**—Gordon Rosenblum, M.D., and Edward Lamont, M.D., Los Angeles.
Discussion.

4:30—**The Effect of Prednisolone and Hydrocortisone on the Glucose Tolerance Test in Pregnancy**—Milton Smale, M.D., by invitation, and Gail Anderson, M.D., Los Angeles.
Discussion.



ALBERT H. RODI
Chairman



EDWIN G. BOVILL, JR.
Secretary

ORTHOPEDICS

Chairman	Albert H. Rodi, M.D., Los Angeles
Secretary	Edwin G. Bovill, Jr., M.D., San Francisco
Assistant Secretary	G. Wilbur Westin, M.D., Los Angeles

SUNDAY, MARCH 24 9:30 a.m.—Frenchette Room, Lobby Floor

9:30—**A Difficult Intertrochanteric Fracture**—Robert Jameson, M.D., Saigon, Viet-Nam, Joseph Bernstein, M.D., San Francisco, and Brian Ewald, M.D., San Francisco, by invitation.

9:50—**Treatment of Rheumatoid Deformities of the Foot**—Leonard Marmor, M.D., Los Angeles.

10:10—**Posterior Transplants in the Paralyzed Extremities**—G. Wilbur Westin, M.D., Los Angeles.

10:30—**Fractures of the Odontoid Process: Long-term Follow-up Study of 26 Cases**—Alf Nachemson, M.D., San Francisco, by invitation.

10:50—**The Relationship of Foot Deformities in Poliomyelitis to Muscle Paralysis**—James D. Brown, M.D., Downey.

11:10—**Chairman's Address: Problems with Compression Arthrodesis of the Ankle**—Albert H. Rodi, M.D., Los Angeles.

11:30—**Business Meeting.**

EMERGENCY CALLS AND MESSAGES

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PATHOLOGY AND BACTERIOLOGY

Chairman . . . . Carl M. McCandless, Jr., M.D., San Francisco
Secretary . . . . Richard O. Myers, M.D., Van Nuys
Assistant Secretary . . . . Melvin B. Black, M.D., San Francisco

CARL M. McCANDLESS, JR.
Chairman

RICHARD O. MYERS
Secretary

SUNDAY, MARCH 24 9:30 a.m.—Colonial Room, Lobby Floor

9:30—**Expectoration of Endobronchial Tumor Tissue**—William H. Kern, M.D., Los Angeles.
Discussion.

9:45—**Quantitative Estimation of A_2 Hemoglobin by Filter Paper Electrophoresis**—Melvin B. Black, M.D., and, by invitation, Hugh Miller, B.S., San Francisco.
Discussion.

10:05—**The Pathology of Pleuriglandular Adenomatosis with Zollinger-Ellison Syndrome**—Suleiman K. Abul-Haj, M.D., Los Angeles, by invitation.
Discussion.

10:25—**Methylene Blue Staining Technique for Urinary Cytology**—Eileen B. King, M.D., San Francisco.
Discussion.

10:50—**Hyperplasia and Neoplasia of the Adrenal Cortex and Medulla in Hypertension: A Review**—Russell P. Sherwin, M.D., Los Angeles, by invitation.
Discussion.

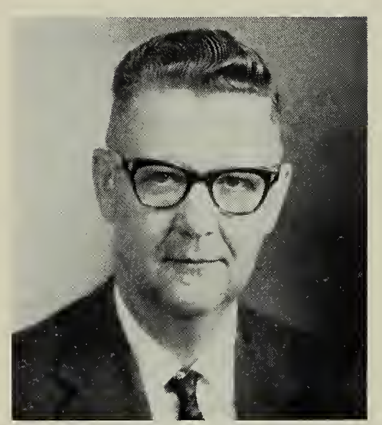
11:10—**Vascular Lesions in Sarcoidosis**—Jesse L. Carr, M.D., San Francisco.
Discussion.

11:35—**Business Meeting.**

REGISTRATION

Registration and information desks are located in the Ballroom Foyer, Casino Floor. *All members, guests, and visitors are requested to register immediately on arrival.* There is no charge for registration. Registration desks are open Saturday through Wednesday. *Admission to the general and section sessions and exhibit areas is by badge only.*

HENRY S. RICHANBACH
Chairman



LAWRENCE E. RECK
Secretary

PEDIATRICS

Chairman . . . . Henry S. Richanbach, M.D., Burlingame
Secretary . . . . Lawrence E. Reck, M.D., San Diego
Assistant Secretary . . . . M. Harry Jennison, M.D., Palo Alto

SUNDAY, MARCH 24 9:30 a.m.—East Venetian Room, Lobby Floor

Joint Meeting with Sections on Internal Medicine, Obstetrics and Gynecology and General Practice

Endocrinology

Moderator: Henry S. Richanbach, M.D., Burlingame

9:30—**General Medical Uses of Steroids**—Peter H. Forsham, M.D., San Francisco.

10:00—**Abnormalities of Sex Differentiation and Sex Determination**—Melvin M. Grumbach, M.D., New York City, by invitation.

10:50—**Hormonal Regulation of Lipid Metabolism**—Laurance W. Kinsell, M.D., Oakland.

11:20—**Central Nervous System Control of Endocrine Function**—Charles W. Lloyd, M.D., Shrewsbury, Massachusetts, by invitation.

11:50—**The Preparation and Use of Human Growth Hormone**—Willard VanderLaan, M.D., La Jolla.

12:30—**Adjourn to Grove Lounge, Lobby Floor.**

12:30—**Pediatricians' Luncheon and Panel Discussion.** Advance Reservations are necessary and may be made with Jack Bills, M.D., 14914 Sherman Way, Van Nuys.

The Pediatrician and the Crippled Children's Service

Moderator: Henry S. Richanbach, M.D., Burlingame

Panel Members: Peter Cohen, M.D., San Francisco, Charles R. Gardipee, Jr., M.D., Berkeley, Neil Litman, M.D., Los Angeles, James C. MacLaggan, M.D., San Diego.

WEDNESDAY, MARCH 27
2:00 p.m.—East Venetian Room, Lobby Floor

Joint Meeting with Sections on Psychiatry and Neurology, and Preventive Medicine and Public Health

The Neurologically Handicapped Child

2:00—**The San Mateo County Pilot Study of Neurologically Handicapped Children**—Henry S. Richanbach, M.D., Burlingame.

2:45—**Panel Discussion**

Moderator: Margaret H. Jones, M.D., Los Angeles

Panel Members: Evis J. Coda, M.D., Santa Monica, Knox H. Finley, M.D., San Francisco, LeRoy F. Kurlander, M.D., San Diego, Ralph C. Hornberger, M.D., Berkeley.

3:30—**Open Discussion with Questions Submitted from the Floor.**

4:00—**Business Meeting.**

PHYSICAL MEDICINE

Chairman . . . . Karl H. Haase, M.D., Los Angeles
Secretary . . . . Frances Baker, M.D., San Mateo
Assistant Secretary . . O. Leonard Huddleston, M.D., Santa Monica

KARL H. HAASE
Chairman

FRANCES BAKER
Secretary

MONDAY, MARCH 25
9:30 a.m.—East Venetian Room, Lobby Floor

Joint Meeting with Sections on Industrial Medicine and General Practice

Symposium

Injuries and Diseases of the Neck and Shoulder

Moderator: J. Blair Pace, M.D., Oceanside

9:30—The Problem as Presented to the Insurance Industry—Gordon Snow, LL.B., Los Angeles, by invitation.

10:00—The Problem as Seen from the Orthopedic Viewpoint—Harold E. Crowe, M.D., Los Angeles.

10:30—Neurosurgical Considerations: A New Explanation of the Pain Mechanisms—Benjamin L. Crue, Jr., M.D., Arcadia.

11:00—The Physical Medicine Approach—Ralph E. Worden, M.D., Los Angeles.

11:30—Questions and Answers.

MONDAY, MARCH 25 2:00 p.m.—Regency Room, Lobby Floor

2:00—Introduction—Karl H. Haase, M.D., Los Angeles.

2:05—Dynamic Physical Restoration of Patients with Active Tuberculosis—Carrie E. Chapman, M.D., and A. Gerson Hollander, M.D., Oakland.

2:25—

Symposium

Pulmonary Emphysema

2:25—Sub-Gross and Functional Anatomical Characteristics of Emphysema—Richard F. McLaughlin, Jr., M.D., Burlingame.

2:50—Physiology of Emphysema—Jack D. Hackney, M.D., Los Angeles.

3:15—Emphysema—A Working Hypothesis as a Basis for Improved Treatment — John McM. Mennell, M.D., Long Beach, by invitation.
Discussion.

3:45—Recess.

3:55—Physical Measures in Treatment of Children with Rheumatoid Arthritis—Lucile M. Eising, M.D., San Francisco.

4:15—The Orthopedic Management of Several Types of Progressive Muscular Dystrophy—Thomas Gucker, III, M.D., Los Angeles.

4:35—Business Meeting.

IRVING D. LITWACK
Chairman

HERBERT BAUER
Secretary

PREVENTIVE MEDICINE AND PUBLIC HEALTH

Chairman . . . . Irving D. Litwack, M.D., Long Beach
Secretary . . . . Herbert Bauer, M.D., Woodland
Assistant Secretary . . . . Morris L. Grover, M.D., Pasadena

WEDNESDAY, MARCH 27 9:30 a.m.—Lido Room, Lobby Floor

9:30—**Santee Water Reclamation Project—J. B. Askew, M.D., San Diego.**

10:15—**Human Genetics: Clinical Applications—Robert E. Greenberg, M.D., Palo Alto.**

11:00—**Recess and Business Meeting.**

11:15—**Report of the Crippled Children Services Epilepsy Study Project—Harry E. Howard, M.D., Berkeley.**

11:45—**Review of Pregnancies in the Secondary Schools—Yoshiye Togasaki, M.D., Martinez, and by invitation Harriet Gill, M.S.W., Martinez.**

WEDNESDAY, MARCH 27
2:00 p.m., East Venetian Room, Lobby Floor

Joint Meeting with Sections on Pediatrics, and Psychiatry and Neurology

The Neurologically Handicapped Child

2:00—**The San Mateo County Pilot Study of Neurologically Handicapped Children—Henry S. Richanbach, M.D., Burlingame.**

2:45— **Panel Discussion**

Moderator: Margaret H. Jones, M.D., Los Angeles
Panel Members: Evis J. Coda, M.D., Santa Monica, Knox H. Finley, M.D., San Francisco, LeRoy F. Kurlander, M.D., San Diego, Ralph C. Hornberger, M.D., Berkeley.

3:30—**Open Discussion with Questions Submitted from the Floor.**

BRING PROPER IDENTIFICATION
FOR REGISTRATION

VISIT SCIENTIFIC AND
TECHNICAL EXHIBITS

PSYCHIATRY AND NEUROLOGY

Chairman . . . . Mark Zeifert, M.D., Fresno
Secretary . . . . Henry S. Colony, M.D., Oakland
Assistant Secretary . . . . . Allen Jay Enelow, M.D., Pacific Palisades

MARK ZEIFERT
Chairman

HENRY S. COLONY
Secretary

WEDNESDAY, MARCH 27

9:30 a.m.—East Venetian Room, Lobby Floor

9:30—Acute Catatonic Reaction of Adolescence—Leonard Kurland, M.D., and Joseph D. Teicher, M.D., Beverly Hills.

9:50—Discussion by John Gussen, M.D., Los Angeles.

10:00—The Theory and Practice of Community Psychiatry—Portia Bell Hume, M.D., Berkeley.

10:20—Discussion by Edward J. Stainbrook, M.D., Los Angeles.

10:30—The Open End in the Psychotherapeutic Transaction—Werner Mendel, M.D., Los Angeles.

10:50—Discussion by Allen Jay Enelow, M.D., Pacific Palisades.

11:00—Family Interaction and Personality Development: A Methodology—Jules Riskin, M.D., Palo Alto.

11:20—Discussion by Portia Bell Hume, M.D., Berkeley.

11:30—Failed Appointments and Socioeconomic Class—Joe Yamamoto, M.D., Leta McKinney Adler, Ph.D., and Marcia Goin, M.D., Los Angeles, all by invitation.

11:50—Discussion by Harry R. Brickman, M.D., Los Angeles.

12:00—Business Meeting.

WEDNESDAY, MARCH 27

2:00 p.m.—East Venetian Room, Lobby Floor

Joint Meeting with Sections on Pediatrics, Preventive Medicine and Public Health

The Neurologically Handicapped Child

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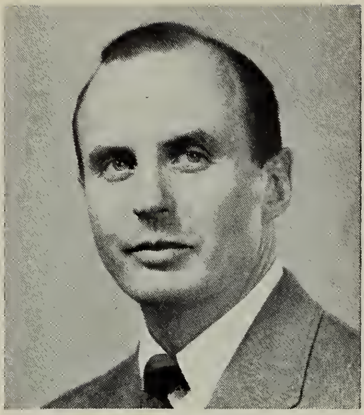
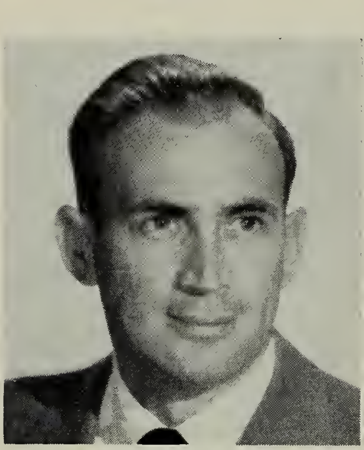

ROBERT L. SCANLAN
Chairman


WALTER GAINES
Secretary

RADIOLOGY

Chairman . . . . Robert L. Scanlan, M.D., Los Angeles
Secretary . . . . Walter Gaines, M.D., San Mateo
Assistant Secretary . . . . John L. Gwinn, M.D., Los Angeles

SUNDAY, MARCH 24 9:30 a.m.—Regency Room, Lobby Floor

9:30—**Upright Renal Arteriography**—Dixon L. Hughes, M.D., Sacramento.

9:45—**Radiologic Findings Following Trauma to the Respiratory Tree**—Maer B. Ozonoff, M.D., San Francisco.

10:00—**Radiographic Evaluation of the Laryngeal Airway**—Stanley R. Reich, M.D., San Francisco, and by invitation George Foo, M.D., San Francisco.

10:25—**Recess.**

10:35—**Cinefluorographic Examination of the Upper Gastrointestinal Tract**—John H. Woodruff, Jr., M.D., Torrance, and by invitation R. C. Jamison, M.D., Torrance.

11:00—**Correlation of the Renogram with Other Radiographic Renal Studies**—Fred H. Mandrick, M.D., Los Angeles, by invitation, and Milo M. Webber, M.D., Los Angeles.

11:20—**Antrasellar and Parasellar Lesions—A Second Look at an Old Subject**—John D. Camp, M.D., Los Angeles.

11:50—**Evaluating Image Quality**—Bernard J. O'Loughlin, M.D., Los Angeles.

12:15—**Business Meeting.**

SUNDAY, MARCH 24 2:00 p.m.—Regency Room, Lobby Floor

2:00—**Sarcomas Arising Following Radiation Therapy**—Theodore L. Phillips, M.D., San Francisco, by invitation, and Glenn E. Sheline, M.D., San Francisco.

2:20—**Radiation Therapy of Inflammatory Neuropathy**—Robert L. Scanlan, M.D., Los Angeles.

2:40—**Radioisotopic Brain Scan**—Paul M. Meadows, M.D., Los Angeles.

3:00—**Recess**—**Annual Meeting of the California Radiological Society** (Formerly Pacific Roentgen Society).

VISIT SCIENTIFIC AND
TECHNICAL EXHIBITS

UROLOGY

Chairman	August Spitalny, M.D., San Francisco
Secretary	Henry Bodner, M.D., Van Nuys
Assistant Secretary	Michael J. Feeney, M.D., San Diego

AUGUST SPITALNY
Chairman

HENRY BODNER
Secretary

TUESDAY, MARCH 26 9:30 a.m.—Lido Room, Lobby Floor

9:30—**Iatrogenic Urological Disease**—Carl Burkland, M.D., Sacramento.
Discussant: Allan H. Howard, M.D., Van Nuys.

9:50—**Endotoxin Shock**—Max Harry Weil, M.D., Los Angeles.
Discussant: Bernard Silver, M.D., Los Angeles.

10:10—**Hydrodynamics of Renal Cysts and Hydroceles**—Robert Pearman, M.D., Encino.

10:20—**Upright Aortography in the Diagnosis and Study of Renal Artery Lesion**—Joseph J. Kaufman, M.D., Los Angeles.
Discussant: John Fenimore Cooper, M.D., Los Angeles.

11:00—**Adjourn to Colonial Room, Lobby Floor.**

Medical Motion Picture Symposium on Genito-Urinary Problems

TUESDAY, MARCH 26 2:00 p.m.—Lido Room, Lobby Floor

2:00— **Panel Discussion**

Chemotherapy of Genito-Urinary Tumors

Moderator: Donald B. Rochlin, M.D., Los Angeles

Members of the Panel: Robert J. Prentiss, M.D., San Diego, Edward Langdon, M.D., Los Angeles, and Byron Hall, M.D., San Francisco.

3:00—**Adrenal Rest Tumors in Testes**—George J. Hamwi, M.D., Columbus, Ohio, by invitation.

3:30—**Mannitol—Its Use for General Urological Purposes**—Raymond E. Weston, M.D., Beverly Hills.

3:40—**Mannitol in Transurethral Prostatectomy**—Henry Bodner, M.D., Allan H. Howard, M.D., and Stanley C. Ross, M.D., Van Nuys.
Discussants: Sam Peck, M.D., San Diego, and Burton Smith, M.D., Santa Monica.

4:00—**Role of the Urologist in Space Medicine**—Abraham T. K. Cockett, M.D., Torrance, by invitation.
Discussants: Willard Goodwin, M.D., and C. I. Barron, M.D., Los Angeles.

4:25—**Surgery of a Solitary Kidney**—Miguel A. Llanos, M.D., Los Angeles.
Discussant: Harold M. Holland, M.D., Beverly Hills.

4:45—**Hydrocolpus in a Newborn**—Robert T. Plumb, M.D., and Janice Kelly, M.D., San Diego, and by invitation James R. Dillon, Jr., M.D., San Diego.

5:15—**Business Meeting.**

MOTION PICTURE SYMPOSIA

General Chairman
JAMES H. THOMPSON, M.D.
San Francisco

SUNDAY THROUGH WEDNESDAY MARCH 24 THROUGH 27, 1963

Colonial Room—Lobby Floor
Ambassador Hotel
Los Angeles

This year's Motion Picture Symposia will present an outstanding program. Your Committee has worked hard to produce the interesting and instructive series of topics. We are attempting to provide material which will be of general interest to all physicians, and of such technical quality to attract the attention of specialists in the various fields.

Each program will be a symposium, utilizing about two-thirds of the time for projection of pictures, and one-third for panel discussions by authorities in the field.

For the first time the symposia will include several motion pictures which have been produced especially for this program. These showings will be the world premieres for these films.

Be sure to read the SPECIAL MOTION PICTURE PROGRAM distributed at the time of registration with complete listing of films, moderators, discussants and time schedules. You are cordially invited to attend these stimulating presentations.

SUNDAY, MARCH 24

12:15 p.m. to 1:45 p.m.
Ophthalmology
Chairman: Stacy R. Mettier, Jr., M.D., San Francisco

2:00 p.m. to 3:30 p.m.
Diagnostic Orthopedics
Chairman: Mason Hohl, M.D., Beverly Hills

3:30 p.m. to 5:00 p.m.
Isotopes and Nuclear Radiations
Chairman: John H. Lawrence, M.D., Berkeley

MONDAY, MARCH 25

9:30 a.m. to 11:00 a.m.
The Gallbladder and Thyroid: Controversies in Surgical Management
Chairman: William P. Mikkelsen, M.D., Los Angeles
Moderator: Leonard Rosoff, M.D., Los Angeles

11:00 a.m. to 12:30 p.m.
Pathology and Treatment of Ano-Rectal Diseases
Chairman: Walter Birnbaum, M.D., San Francisco

2:00 p.m. to 3:30 p.m.
New Horizons in Medicine: Clinical Electronics
Chairman: Noel Thompson, M.D., Palo Alto

3:30 p.m. to 5:00 p.m.
Medicine in Space
Chairman: Bruce V. Leamer, M.D., Los Angeles, by invitation

TUESDAY, MARCH 26

9:30 a.m. to 11:00 p.m.
Obstetrics-Gynecology
Chairman: Gilbert Webb, M.D., San Francisco

11:00 a.m. to 12:50 p.m.
Urology
Chairman: Joseph J. Kaufman, M.D., Los Angeles

2:00 p.m. to 3:30 p.m.
Endocrinology
Chairman: Roberto F. Escamilla, M.D., San Francisco

3:30 p.m. to 5:00 p.m.
Current Problems in Mental Development and Retardation
Chairman: George N. Donnell, M.D., Los Angeles

WEDNESDAY, MARCH 27

9:00 a.m. to 11:00 a.m.
Clinical and Laboratory Techniques in Diagnosis of Coronary Disease
Chairman: Rodman D. Starke, M.D., San Francisco, by invitation

11:00 a.m. to 12:30 p.m.
Peripheral, Arterial and Venous Surgery
Chairman: Max R. Gaspar, M.D., Long Beach

2:00 p.m. to 3:30 p.m.
Hiatus Hernia and Thoracic Injuries
Chairman: James V. Maloney Jr., M.D., Los Angeles

3:30 p.m. to 5:30 p.m.
Neurology—Neurosurgery
Chairman: Edward Keller, M.D., San Francisco

WOMAN'S AUXILIARY

to the

CALIFORNIA MEDICAL ASSOCIATION

THIRTY-THIRD ANNUAL CONVENTION

MARCH 24 TO 27, 1963

***Headquarters:* Ambassador Hotel, Los Angeles**

Convention Chairman: MRS. TENERO D. CARUSO
Convention Co-Chairman: MRS. ALBERT F. STELHORN

REGISTRATION—*Main Lobby*

Sunday, March 24—9:00 a.m. to 5:00 p.m.
Monday, March 25—8:00 a.m. to 5:00 p.m.
Tuesday, March 26—8:30 a.m. to noon

SATURDAY, MARCH 23

7:30 p.m.—Report to the C.M.A. House of Delegates by Mrs. Floyd K. Anderson, Auxiliary President, Embassy Room, Ambassador Hotel. Doctors' wives are invited to attend. (Auxiliary members will not register for this meeting. Woman's Auxiliary Registration will start Sunday morning.)

SUNDAY, MARCH 24

9:00 a.m.—Executive Committee Breakfast Meeting, Garden Room.

2:30 p.m.—Pre-Convention Board Meeting, Grove Lounge.

7:00-8:00 p.m.—California Medical Association Reception (admittance by ticket to Presidents' Dinner), Venetian Rooms.

8:00 p.m.—Presidents' Dinner and Ball honoring the President of the C.M.A., Dr. Omer W. Wheeler, and the President of the Woman's Auxiliary, Mrs. Floyd K. Anderson, Cocoanut Grove. Formal dress optional.

MONDAY, MARCH 25

9:00 a.m.—Opening Session of the House of Delegates, Embassy Room.

12:30 p.m.—Buffet Luncheon, Embassy Room Foyer.

2:00 p.m.—Afternoon Session of the House of Delegates, Embassy Room.

TUESDAY, MARCH 26

9:00 a.m.—Final Session of the House of Delegates, Embassy Room.

12:45 p.m.—Presidents' Luncheon and Fashion Show, honoring Mrs. Floyd K. Anderson; Mrs. Homer R. Wolfsen, the new President-Elect; State Past Presidents; the C.M.A. Advisory Board and their wives. Cocoanut Grove. Fashions by Helga.

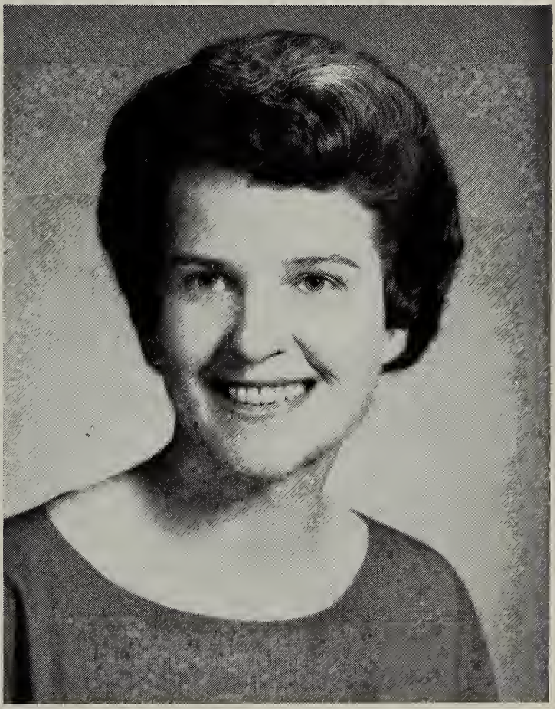
3:30 p.m.—Post-Convention Board Meeting, Mrs. Homer R. Wolfsen, presiding, Grove Lounge.

WEDNESDAY, MARCH 27

9:00 a.m.—Orientation Meeting. For: 1963-64 State Board Members, District Councilors and County Presidents. Incoming County Board Members also welcome. Mrs. Homer R. Wolfsen, presiding, Grove Lounge.

Hospitality Suite for All Doctors' Wives—Rooms 114-115. Courtesy of the Members of the Woman's Auxiliary to the Los Angeles County Medical Association.

MRS. FLOYD K. ANDERSON, President



MRS. HOMER R. WOLFSEN, President-Elect

Technical Exhibits

The Ballroom, Sunset Room and Boulevard Room of the Ambassador Hotel will again house the technical exhibits. This area is noted as outstanding for exhibit purposes and a record number of exhibitors will present their products and services for members of the Association.

All exhibits and all products exhibited have been screened by a committee as a means of eliminating those which do not meet high standards. The exhibitors agree to this procedure and agree that by this means each will be in good company.

Here in one area will be found the latest developments in drugs, equipment and services to aid the physician in his professional activities. All physicians are urged to visit the exhibits; meetings have been planned to allow ample time for this important activity. Your visit will not only help bring your own knowledge up to date; it will demonstrate to our exhibitors, who contribute so much to the success of the meeting, that we recognize and appreciate their fine cooperation.

Exhibits will be open from 9 a.m. to 5 p.m. each day, with an early closing on Wednesday.

ABBOTT LABORATORIES Sunset Room
North Chicago, Illinois Booth 55

Abbott Laboratories invites you to visit our exhibit. Our representatives will be happy to answer any questions you may have concerning our leading products and new developments.

ALTA-DENA DAIRY Sunset Room
City of Industry Booth 35

Kefir's excellent reception as a follow-up with and after antibiotics, is the reason we feature it again this year.

Kefir Continental Cultured milk contains friendly Lactobacillus Acidophilus, L. Bulgaricus and L. Kafzazickus. Very beneficial to the intestinal tract.

Visit this booth for a refreshing drink of Kefir, or Certified Milk that bears the Medical Seal indicating a fresh, clean, guaranteed safe and more nutritious product.

Sample the new Certified Pasteurized-Homogenized Milk or the Certified Non-Pasteurized Milk. Representatives will serve you and answer your questions.

ANDERSON LABORATORIES Sunset Room
Columbus, Ohio Booth 48

Alphalac—The liquid food high in polyunsaturated fatty acids for nutritional management of hypercholesteremia whether present or predictable on the basis of associated pathology. In peptic ulcer, Alphalac is indicated as a substitute for milk and cream (high in saturated fatty acids) in modified sippy diets. Because it is a food, designed as an integral part of the diet, there are no side effects or pharmacogenic discomforts.

Andercid Antacid Wafers—Time-tested antacids, calcium carbonate and magnesium trisilicate, incorporated in a tasteful oven-baked wafer—with no trace of conventional antacid grittiness. This uniquely palatable formulation enhances patient fidelity to an antacid regimen and minimizes change in bowel function. Thus, Andercids overcome the major objections to antacids—chalkiness, taste, and constipation.

ARMOUR PHARMACEUTICAL COMPANY Ballroom
Chicago, Illinois Booth 21

You are invited to attend the Armour Pharmaceutical Company exhibit which will feature: Chymoral, a systemic anti-inflammatory enzyme tablet which reduces inflammation, swelling and pain; Chymar Ointment, effective topical preparation combining steroid, antibiotic and enzyme; Listica (Hydroxyphenamate) conservative therapy for the relief of moderate and mild tension and anxiety; and Sinaxalate, new muscle relaxant analgesic combination to relieve stiff, painful muscles and tender joints.

AYERST LABORATORIES Sunset Room
New York, New York Booth 53

Physicians are cordially invited to visit the Ayerst exhibit where professional representatives will be available to discuss Grisactin, microsized Griseofulvin, Riopan, Fluothane and other Ayerst specialties.

BARNES-HIND LABORATORIES, INC. Boulevard Room
Sunnyvale Booth 112

Barnes-Hind Laboratories, Inc., Sunnyvale, California, will exhibit Tranquinal and Heb-Cort Topical Preparations.

Tranquinal is an ideal daytime sedative that reduces excitation without producing side effects.

Heb-Cort Topical Preparations are designed for maximum therapeutic effect on various dermatitis problems amenable to corticosteroid and antibiotic treatment. Nine popular dosages can now be prescribed under the regulations set forth with the California Public Assistance Medical Care Program.

DON BAXTER, INC. Ballroom
Glendale Booth 23

The safe, simple, Don Baxter Parenteral System; featuring the new additive site closure.

BRISTOL LABORATORIES Sunset Room
Syracuse, New York Booth 70

Bristol Laboratories' exhibit features Prostaphlin (sodium oxacillin). This newest member of the Bristol family of synthetic penicillins possesses the property of resistance to inactivation by staphylococcal penicillinase. Prostaphlin is acid resistant, therefore, it can be conveniently administered in the oral dosage form, making treatment in office and home practical and reasonable.

BROEMMEL PHARMACEUTICALS Sunset Room
San Francisco Booth 45

Broemmel Pharmaceuticals presents an exhibit of ethical pharmaceutical preparations especially created for the treatment of eye, ear and nose conditions. Our complete line of sterile, buffered ophthalmic products include miotic, antibiotic, steroidal, antihistaminic and decongestant preparations. Sterile otic solutions and suspensions for effective treatment of inflammation and infections of the ear are also Broemmel specialties. Visitors are invited to view our exhibit where company representatives will be happy to answer questions or discuss our products.

BURROUGHS WELLCOME & CO. (U.S.A.) INC. Ballroom
Tuckahoe, New York Booth 27

You are cordially invited to visit Burroughs Wellcome & Co. (U.S.A.) Inc., booth No. 27 for the latest information on our products. New products of particular interest at this meeting, which our staff will be pleased to discuss with you, include Emprazil-C for the treatment of coughs and colds, Migral Forte for the treatment of vascular headaches, and Cardilate for angina.

BURTON, PARSONS & COMPANY, INC. Sunset Room
Washington, D. C. Booth 46

You are cordially invited to visit the Burton, Parsons & Company exhibit where our representative will be showing Konsyl, L. A. Formula, neutraCarb and EKG Sol. Samples, descriptive literature, and information will be available on all these products. Konsyl and L. A. Formula are the original refined psyllium bulk laxatives. neutraCarb, the antacid with Vitamin C is available in five delightful flavors, cherry, lemon, lime, peppermint and raspberry. EKG Sol is the new and modern electrode cream for electrocardiography and electro-encephalography.

CAMERON-MILLER SURGICAL INSTRUMENTS CO.
Chicago, Illinois Sunset Room, Booth 74

We would like the opportunity of demonstrating to you our new Electrosurgical Units, Snares, Suction Coagulators and Biopsy Punches. Also showing illuminated Rectal Instruments (distal and proximal), Vaginal Specula, Otoscopes, Mouth Gags, Transilluminators, Headlites and other electrically lighted diagnostic instruments.

S. H. CAMP & COMPANY Boulevard Room
Jackson, Michigan Booth 106

At Camp, you will see many new products, including completely new adjustable cervical collar, the new breast Prosthesis Sling, new Prosthesis Comfort Pillow, new lumbrosacral supports, new Hoke type orthopedic support, new shoulder brace for adults and children, new Camp Cadenza Functional Girdle made of Leno with Lycra Spandex, and other new supports and appliances.

CANRIGHT CORPORATION Sunset Room
Glendale Booth 75

CASS & JOHANSING Sunset Room
Los Angeles Booth 34

Representatives will be present to discuss the approved Association Insurance Programs—Professional Liability, Life and Accidental Death and Dismemberment.

In addition, assistance in complete insurance programming will be available.

CIBA PHARMACEUTICAL COMPANY Boulevard Room
Summit, New Jersey Booth 103

Ser-Ap-Es is a combination of 3 antihypertensive agents from Ciba research—Serpasil, Apresoline, and Esidrix—in a single tablet. Ser-Ap-Es lowers blood pressure uniformly, consistently, and safely while it controls such hypertensive complications as anxiety, impaired renal circulation and edema. With Ser-Ap-Es moderate to severe hypertension can be treated effectively with greater convenience, and at lower cost to the patient.

THE COCA-COLA COMPANY Ballroom
Atlanta, Georgia Booth 15

Ice-cold Coca-Cola served through the courtesy and cooperation of the Coca-Cola Bottling Company of Los Angeles, and The Coca-Cola Company.

COLLIER'S ENCYCLOPEDIA Boulevard Room
New York, New York Booth 84

The all new Collier's Encyclopedia and The Harvard Classics.

CORECO RESEARCH CORP. Sunset Room
New York, New York Booth 61

The Coret Camera embodies the principle of electronic flash and constant automatic control of such factors as distance, aperture, field, and exposure. Now, for the first time, Coreco offers a completely automatic professional clinical camera purposely designed to achieve the ultimate in surface, intra-oral, and intra-tubular photography. Because of the simplicity of operation, even an inexperienced doctor or nurse can achieve consistently perfect color transparencies.

CUTTER LABORATORIES Ballroom
Berkeley Booth 11

Your local Cutter representatives invite you to visit the Cutter booth.

We will have our complete blood fraction and pharmaceutical lines on display and will feature Hyper-Tet (tetanus immune globulin—human), and Barbicaine (antispasmodic sedative combination). We will also make available a "Convention Special" to those doctors in attendance.

DESITIN CHEMICAL CO., INC. Sunset Room
Providence, Rhode Island Booth 52

Desitin Ointment: For treatment of burns, ulcers, diaper rash, etc.

Desitin Powder: Relieves chafing, sunburn, diaper rash, etc.

Desitin Suppositories and Rectal Ointment: Relieve pain and itching in hemorrhoids, fissures. No anesthetics.

Desitin Acne Cream: Flesh-tinted "Medicream" for the treatment of Acne.

Desitin Cosmetic & Nursery Soap: Super-mild.

Desitin Suppositories with Hydrocortisone: Prompt relief in inflammatory conditions, proctitis, severe pruritus, edema. No anesthetics.

Desitin Ointment with Hydrocortisone: Anti-inflammatory, anti-pruritic, anti-allergic.

Desitin Hydrocortisone Cream and Cor-D-Tar Cream: Water washable, stainless cream. For eczematous, pruritic dermatoses.

New—Anafung: Antifungal Powder, Cream, Aerosol Spray.

THE DEVEREUX SCHOOLS Sunset Room
Santa Barbara Booth 32

Representatives of this special residential treatment center will be present to acquaint physicians with this unique facility near Santa Barbara for emotionally disturbed and slow-learning children. Physicians are invited to visit the exhibit for research reprints and descriptive brochures.

THE DIETENE COMPANY Boulevard Room
Minneapolis, Minnesota Booth 79

Have you tasted Meritene? Meritene is the good-tasting *Protein*-vitamin-mineral Food Supplement prescribed to provide concentrated nutrition for patients with poor appetite or tolerance for ordinary food. Visit our booth and let us serve you a cool, refreshing Meritene Nourishment.

While there, review also our Dietene Reducing Plan, designed to get better cooperation from over-weight patients. The Dietene Plan provides optimum nutrition and maximum satiety without the use of drugs.

Meritene and Dietene are advertised only to the Medical Profession.

DOME CHEMICALS INC. Boulevard Room
New York, New York Booth 90

Dome Chemicals Incorporated, world leader in dermatologicals, will feature dermatological specialties that are of general interest to the members of the California Medical Association. Topical steroid products such as Cort-Dome, Neo-Cort-Dome, Neo-Domeform-HC, etc., will be featured.

Our representatives will be available to discuss with you several products recently released from the research laboratories of Dome.

DUKE LABORATORIES, INC. Boulevard Room
South Norwalk, Connecticut Booth 110

Duke Laboratories, Inc., are exhibiting Elastoplast bandages and unit dressings; Gelocast, a prepared Unna's paste bandage; Aquaphor, an ointment base; Tecto, a protective emollient cream; Nivea Creme, Nivea Skin Oil and Basis Soap, the Prescriber's Cosmetics.

EISELE & COMPANY Sunset Room
Nashville, Tenn. Booth 71

Eisele & Company will exhibit their regular line of hypodermic syringes, both the regular and interchangeable types, hypodermic needles, clinical thermometers, elastic bandages, specialty glassware, and other related items.

THE EMKO COMPANY Boulevard Room
St. Louis, Missouri Booth 80

The Emko Company will exhibit their only product—Emko Vaginal Foam—the first aerosol foam contraceptive product on the market. Our well trained Emko representatives will show you Emko's advantages over other contraceptive methods, particularly the high rate of effectiveness, lack of messiness and lack of excessive lubrication.

ENCYCLOPEDIA AMERICANA Sunset Room
Washington, D. C. Booth 36

In a special exhibit offer to the medical profession, we are featuring the Min/Max Teaching Machine, and the completely revised, pre-release 1963 edition of Encyclopedia Americana in a new white binding.

ENCYCLOPAEDIA BRITANNICA Ballroom
Los Angeles Booth 10

Releasing new 1963 Edition of Encyclopaedia Britannica, world's foremost classic reference set.

ENDO LABORATORIES INC. Boulevard Room
Richmond Hill, New York Booth 91

Our representatives will be happy to discuss with you:

Coumadin—The anti-coagulant of choice

Percodan—The preferred analgesic

Hycodan & Hycomine Syrups—The proven anti-tussives

Numorphan—For control of severe pain.

FIELD EMISSION COPORATION Sunset Room
McMinnville, Oregon Booth 39

Field Emission Corporation's display will feature the new 45-lb. Fexitron Model 845 flash x-ray system. This diagnostic radiographic unit incorporates "big machine" performance into a hand carried portable. The Fexitron Model 845 utilizes a .5 mm source size cold cathode field emission x-ray tube and a single pulse exposure time of only 5/100,000,000ths of a second. The unit occupies less than one cu. ft. of storage space and operates on standard 110V, 60 cycle current. The display will include the hand carried portable model, the cart-mounted clinic-hospital version and accessory equipment.

CHARLES O. FINLEY & CO. Sunset Room
Chicago, Illinois Booth 31

FULLER PHARMACEUTICAL COMPANY Boulevard Room
Minneapolis, Minnesota Booth 100

A unique approach, simple yet effective, describes Therapads, a new therapeutic acne concept. Of course, Tucks and its new witch hazel analogue Triamel Ointment and Cream are both on hand to renew old acquaintances and make new friends.

GEIGY PHARMACEUTICALS Ballroom
Yonkers, New York Booth 16

Geigy Pharmaceuticals invites Members and Guests of the Association to visit its exhibit.

The exhibit features important new therapeutic developments in the management of inflammation, as well as current concepts in the control of hypertension and edema, depression, obesity, and other disorders, which may be discussed with physicians and representatives in attendance.

GENERAL PHYSICAL MEDICINE Sunset Room
EQUIPMENT CORPORATION, Los Angeles Booth 42

Neuro-Orthion has been a five-year hospital and physical medicine research project for the treatment of spinal and related disorders. Orthion is a complete treatment combining five long-proven therapies; for the first time applied simultaneously. These include cervical traction, pelvic traction, paravertebral massage, soft tissue stimulation, and deep heat. Precisely controlled pneumatic traction is combined with an unusual and patented heat and tissue stimulation. Because of the increasingly broad indications for which it has been found effective, ORTHION has evolved into a method of treatment now sought particularly by the general practitioner.

GERBER PRODUCTS COMPANY — Ballroom Foyer
Fremont, Michigan — Booth 5

Gerber Flash Processed MODILAC . . . A complete formula for infants of all age groups. Gently processed to better conserve nutritional values, it has true milk color and flavor. MODILAC *is* milk adapted to the infant's physiologic requirements by the addition of a selected carbohydrate, replacement of butterfat with corn oil and supplementation with needed vitamins.

Ask for complete information on MODILAC and its companion product MBF (Meat Base Formula). A flexible hypoallergenic formula, MBF provides ideal milk replacement for infants intolerant to milk.

GREAT BOOKS WITH THE SYNTOPICON — Sunset Room
Chicago, Illinois — Booth 44

A new publication of ENCYCLOPAEDIA BRITANNICA—but *not* an encyclopaedia. This is the bringing together of the actual writings of the great thinkers of our culture and civilization, from Homer and the Bible down to Freud in the 20th Century. Come to the booth and request a free demonstration of the amazing SYNTOPICON, which permits you to take any thought, topic or idea and trace it down through the full 30 centuries of Western Civilization.

HOLLAND-RANTOS COMPANY, INC. — Sunset Room
New York, New York — Booth 63

H-R exhibit will feature and representatives will be pleased to discuss:

HYVA Gentian Violet Vaginal Tablets—A simple vaginal antimycotic treatment.

Improved NYLMERATE Jelly & NYLMERATE Antiseptic Solution Concentrate for: Trichomoniasis, Leukorrheas and Mixed Infections.

HOLLANDEX Skin Ointment for dermal disorders—Diaper rash; chafing; skin dryness; prickly heat; sunburn.

KOROMEX (*A*) Vaginal Jelly for conception control when "Jelly Alone" is advised.

KORO-FLEX Contouring Diaphragms and Sets.

KOROMEX Diaphragms and Sets.

KOROMEX Douche Powder.

IVES LABORATORIES — Boulevard Room
New York, New York — Booth 78

IVES LABORATORIES will display the family of ISORDIL® products, providing a dosage form of isosorbide dinitrate suitable to the needs of each patient with coronary insufficiency. There will also be featured CYCLOSPASMOL® (cyclandelate), a peripheral and cerebral vasodilator. Representatives will be in attendance to discuss these products and other fine Ives specialties with you.

JOHNSON & JOHNSON — Sunset Room
New Brunswick, New Jersey — Booth 65

JOHNSON & JOHNSON will display the latest improvements in surgical dressings, as developed by the Johnson & Johnson Research Laboratories. Of special interest is SURGICEL Absorbable Hemostat, a major advance in the control of hemorrhage which does not depend upon the normal clotting mechanism. DERMICEL Surgical Tape, a newly-improved high strength special-purpose dressing tape for patients with unusual adhesive tape sensitivity is an outstanding addition to the complete line of adhesive tape products. Other products, designed for your office, hospital or patient use, are also displayed. You will find well-informed representatives pleased to discuss these products or provide information on any other items made available by the world's largest manufacturer of surgical dressings and baby products.

KEY PHARMACEUTICALS — Boulevard Room
Miami, Florida — Booth 81

NITROGLYN tablets still hold the key spotlight at our booth. Reports indicate advantages in administration of NITROGLYN b.i.d. for angina pectoris due to coronary sclerosis, and their suggested regimen to replace daily use of ten to twenty doses of sub-lingual nitroglycerin. Our latest product, PROTERNOL (Isoproteronal sustained action), is rapidly approaching NITROGLYN acceptance in its field of heart block. CARBAMINE: complete therapy for peptic ulcers and associated digestive disorders.

LAKESIDE LABORATORIES, INC. — Sunset Room
Milwaukee, Wisconsin — Booth 64

IMFERON, LENETRAN and METATENSIN will be featured at the Lakeside exhibit. Complete descriptive information on these and other Lakeside products will be available. Professional Service Representatives will be in attendance, and registration forms for requesting clinical samples will be available. You are cordially invited to visit our exhibit.

LEDERLE LABORATORIES — Ballroom
Pearl River, New York — Booth 30

Members of the California Medical Association and their guests will be most cordially welcomed at the Lederle booth, which is No. 30. Our medical representatives, who have access to the world-wide Lederle research organization, are prepared to furnish information regarding Lederle products and your related medical questions.

ELI LILLY AND COMPANY — Boulevard Room
Indianapolis, Indiana — Booths 95 and 96

You are cordially invited to visit the Lilly exhibit located in space 95-96. The Lilly sales people in attendance welcome your questions about Lilly products and recent therapeutic developments.

R. J. LINDQUIST CO. — Boulevard Room
Los Angeles — Booth 86

New technics in Physical Medicine will be featured by R. J. Lindquist Co. in Booth 86. Stationary multiple-crystal ULTRASOUND, CHRONOWAVE muscle stimulation, pulsing short wave diathermy, rhythmic traction, and paraffin bath therapy will be demonstrated. Be sure to ask for reprints.

J. B. LIPPINCOTT COMPANY — Boulevard Room
Philadelphia, Pennsylvania — Booth 107

J. B. LIPPINCOTT COMPANY presents, for your approval, a display of professional books and journals geared to the latest and most important trends in current medicine and surgery. These publications, written and edited by men active in clinical fields and teaching are a continuation of more than 100 years of traditionally significant publishing.

LLOYD BROTHERS INCORPORATED Sunset Room
Cincinnati, Ohio Booth 69

Welcome to the Lloyd Brothers exhibit. Our professionally trained sales representatives will be pleased to greet you and discuss the merits of our products in your practice.

LOMA LINDA FOOD COMPANY Sunset Room
Arlington Booth 73

The Loma Linda Food Company, manufacturers of the tasty hypoallergenic infant soy milk, Soyalac, will be pleased to show evidence of the nutritional adequacy of their product. The company is America's exclusive manufacturer of fiber-free soy milk. Qualified attendants will be pleased to explain why this milk is unusual in that it does not tend to raise infants' serum cholesterol. Uses of this milk for adult ulcer patients and in cholesterol-lowering diets will be discussed. Samples of this flavorful product will be served.

P. LORILLARD COMPANY Boulevard Room
New York, New York Booth 87

P. Lorillard Company invites you to visit the Kent Cigarette Exhibit.

We are presenting the Story of Kent Cigarettes. And a big part of that story is why you'll feel better about smoking with the taste of Kent.

Kent with the Micronite filter refines away harsh flavor . . . refines away hot taste . . . makes the taste of a cigarette mild.

A table cigarette box with your signature in gold will be a pleasant souvenir of your visit to the convention.

MAGNUSON X-RAY CO. Boulevard Room
Los Angeles Booth 94

Profexray diagnostic x-ray equipment offering ultimate in simple automatic operation yet permitting full flexibility to allow for special technics.

MARSHALL ERDMAN ASSOCIATES, INC. Sunset Room
Madison, Wisconsin; Pleasant Hill, California Booth 68

Model, pictures, and typical floor plans of Marshall Erdman custom-designed medical office buildings for doctors in solo or group practice. Marshall Erdman & Associates, Inc., specialists with over 12 years experience in designing, engineering and building quality office buildings for doctors in over 25 states. A complete building service.

THE S. E. MASSENGILL COMPANY Sunset Room
Bristol, Tennessee Booth 33

McNEIL LABORATORIES, INC. Sunset Room
Fort Washington, Pennsylvania Booth 57

Members of the California Medical Association are cordially invited to visit our Booth No. 57, Mr. Hugh A. Harley in charge. Products to be featured are Butisol Sodium® butabarbital sodium, Clistin® carbinoxamine maleate, Butiserpazide® and Parafon Forte®.

MEAD JOHNSON LABORATORIES Ballroom
Evansville, Indiana Booth 12

The Mead Johnson Laboratories' exhibit has been arranged to give you the optimum in quick service and product information. To make your visit productive, specially trained representatives will be on duty to tell you about our products.

MEDCO PRODUCTS CO., INC. Boulevard Room
Tulsa, Oklahoma Booth 101

Presenting the Medco-Sonlator. Providing a new concept in therapy by combining muscle stimulation and ultra sound simultaneously through a SINGLE Three-Way Sound Applicator.

The Medco-Sonlator is a distinct advance in the effectiveness of physical therapy in your office or hospital. A few minutes spent in our booth should prove of value to your practice.

THE MEDICAL PROTECTIVE COMPANY Ballroom
Fort Wayne, Indiana Booth 13

With exceptional proficiency in defense, so essential to the Doctor's protection today, The Medical Protective Company offers unexcelled coverage in any claim or suit for damages based on professional services rendered or which should have been rendered. Its experience from the successful handling of 84,000 claims and suits during 64 years of Professional Protection Exclusively is unparalleled in the professional liability field. Sound insurance management with constant recognition of the physician's changing needs, assures policyholders of The Medical Protective Company that the propriety of professional services rendered will be properly defended whenever questioned.

MERCK SHARP & DOHME Ballroom Foyer
West Point, Pennsylvania Booth 2

The theme of the Merck Sharp & Dohme exhibit is "SERVICE TO MEDICINE." One phase features the details of the Merck Sharp & Dohme Postgraduate Program. Another feature includes information on teaching films for use by the profession, and also, lay films that can be utilized to portray the story of medicine to the lay public. The exhibit is concluded with a display of finger-tip files on selected Merck Sharp & Dohme products.

MILEX-FERTILEX COMPANY Boulevard Room
Los Angeles Booth 111

Ask to see "the first really well designed instrument for taking Pap smears." Request your reception room copies of "What Teenagers Want to Know" and "A Doctor Discusses Menopause." Also available "A Doctor's Marital Guide for Patients" with Dickinson posture drawings.

MISSION PHARMACAL COMPANY Ballroom
San Antonio, Texas Booth 14

Mission will present the following products: Homapin-4, a potent antispasmodic which is reported to be four times as potent as atropine in depressing ganglionic transmission; Prulet tablets, a gentle laxative, containing an active ingredient which is analogous to a substance found in prunes; Supac-B, analgesic tablets, is a superior A.B.C.

MOBILFONE, INC.

Los Angeles — Boulevard Room, Booth 108

Mobilfone, Inc. will display the following equipment at the Technical Exhibits of the 1963 Annual Session:

1. The new Mobilfone Transistorized Paging Receiver to render service in Los Angeles and Orange Counties and portions of the other adjacent counties.
2. Two way mobile radiotelephone equipment which is installed in automobiles and trucks for service in Los Angeles and Orange Counties and portions of the other adjacent counties.

THE NATIONAL DRUG COMPANY

Philadelphia, Pennsylvania — Sunset Room, Booth 37

TEPANIL, TEPANIL TEN-TAB and ORENZYME are being featured at our exhibit.

TEPANIL is a completely new compound that curbs the appetite with little or no CNS stimulation.

ORENZYME is the *first oral* anti-inflammatory enzyme tablet on the market. ORENZYME is indicated for the treatment of any acute inflammatory process when swelling slows recovery.

THE NETTLESHIP COMPANY OF LOS ANGELES

Los Angeles — Boulevard Room, Booth 98

Administrators of Professional Liability, Group Accident & Sickness, and Life Insurance Programs for County Medical Associations in Southern California.

Qualified representatives available to discuss problems pertaining to hospital or individual professional liability coverage, accident and sickness, life, or other types of insurance.

Literature, which will assist in the prevention of claims and various forms to be used to protect, as far as possible, against malpractice claims.

NEUTROGENA CORPORATION

Santa Monica — Ballroom Foyer, Booth 8

NEUTROGENA SOAP . . . It is a mild, transparent ethanolamine base soap and contains no free alkali. It is not a detergent nor is it medicated; yet so different that it was recently granted a U.S. patent #2,820,768. NEUTROGENA is mild, not drying, and not irritating. It is well tolerated in cases of common dermatitis, cradle cap, diaper irritation, eczema, acne and other common skin problems, especially where washing with soap is contra-indicated.

ORGANON, INC.

West Orange, New Jersey — Boulevard Room, Booth 93

You are cordially invited to visit our exhibit at booth #93. Of particular interest: HEXADROL® (dexamethasone) one of the newer, most highly potent, well tolerated and economical corticosteroids, and DECA-DURABOLIN®—a safe, potent, long-acting anabolic stimulant indicated in a broad range of clinical conditions where tissue building is desired. Our professional service representatives welcome the opportunity to answer your questions concerning HEXADROL, DECA-DURABOLIN or any of our other products. Best wishes for a most enjoyable visit to Los Angeles.

ORTHO PHARMACEUTICAL CORPORATION

Raritan, New Jersey — Boulevard Room, Booth 102

On display is a complete line of products for the control of conception. Representatives on hand will be happy to answer your questions concerning our well-known products and to discuss the latest advances in this field.

OXFORD LABORATORIES

San Mateo — Ballroom Foyer, Booth 3

You are invited to see the OXFORD PROTHROMETER. With this instrument, accurate *prothrombin time* tests can be performed within sixty seconds on one drop of capillary blood. The cost of each test is less than 20¢. The OXFORD PROTHROMETER may be used at the office, laboratory, or bedside. Test demonstrations will be conducted throughout the day.

PACIFIC MEDICAL EQUIPMENT CO.

North Hollywood — Ballroom Foyer, Booth 9

AUDIO-DIGEST FOUNDATION (a non-profit subsidiary of the California Medical Association), gives the busy physician a time-saving tour through the best of some 600 current medical journals, plus the highlights of scores of national meetings. Time-proven, but still unique—these medical tape-recorded services are now offered in six series—General Practice (issued weekly and bi-weekly), and Pediatrics, Internal Medicine, Surgery, Obstetrics and Gynecology, Anesthesiology (all issued semi-monthly). Digest subscribers listen in their car, home or office. Carefully selected tape equipment for playing the Digests is offered at the convention by Pacific Medical Equipment Company.

PARKE, DAVIS AND COMPANY

Detroit, Michigan — Ballroom Foyer, Booth 6

Medical service members of our staff will be in attendance at our booth to discuss important Parke-Davis specialties which will be on display.

PASADENA RESEARCH LABORATORIES, INC.

Pasadena — Sunset Room, Booth 62

PERSON & COVEY

Glendale — Sunset Room, Booth 58

PERSON & COVEY representatives will be on hand to welcome you and discuss our latest pharmaceutical specialties.

PFIZER LABORATORIES

New York, New York — Sunset Room, Booth 60

You are cordially invited to visit the Pfizer Laboratories' booth where our Professional Service Representatives will be pleased to discuss the latest topics of clinical interest.

WM. P. POYTHRESS & CO., INC.

Richmond, Virginia — Boulevard Room, Booth 105

A cordial welcome awaits you at Booth 105, exhibit of Wm. P. Poythress and Company, Inc. MUDRANE, effective, balanced bronchodilator—mucolytic for bronchial asthma; TROCINATE, distinctive potent musculotropic antispasmodic for spasms of the lower intestinal tract and urinary tract; and SYNIRIN, a fast, dual acting analgesic, will be displayed. Your requests for covering literature and for professional trial samples of these Poythress products are cordially invited.

THE PROCTER & GAMBLE COMPANY Sunset Room
Cincinnati, Ohio Booths 49 and 50

IVORY SOAP (Procter & Gamble) offers a series of time-saving leaflet pads for doctors, each pad containing fifty identical tear-out sheets. These sheets, which may be given to patients, contain routine instructions covering general home care. There are also samples of other free, helpful material prepared especially for physicians.

R. J. REYNOLDS TOBACCO COMPANY Sunset Room
Winston-Salem, North Carolina Booth 66

Welcome to the R. J. Reynolds Tobacco Company Exhibit! You are cordially invited to receive a cigarette case (monogrammed with your initials) containing your choice of CAMEL, WINSTON Filter, Menthol Fresh SALEM, or CAVALIER King Size Cigarettes.

RIKER LABORATORIES, INC. Ballroom
Northridge Booth 20

Representatives of Riker Laboratories, Inc. will be glad to supply you with complete information concerning our products which are available to the medical profession. Please feel free to request answers to any questions you may have. We will be looking forward to your visiting our booth.

RITTER COMPANY, INC. Ballroom
Rochester, New York Booth 18

Ritter Company, Inc. invites you to see its exhibit featuring the new Ritter "75" UNIVERSAL TABLE with Mobile Foot Control and other exclusive features, the new low-priced BANTAM BOVIE for office electrosurgery, the popular Castle No. 8 Light and the Castle "777" SPEED-CLAVE for simple, trouble-free sterilization.

A. H. ROBINS COMPANY, INC. Ballroom
Richmond, Virginia Booth 26

Old friends are best, and the reliable 10-to-12 hour sedative and antispasmodic effects of DONNATAL EXTENTABS are well established by years of wide acceptance.

For the patient's complaint of "nervous indigestion," the Donnatal components are combined in DONNAZYME with the natural digestive enzymes of ENTOZYME.

Also available: ROBINUL (anticholinergic), ROBINUL-PH (Robinul with phenobarbital), and SKELAXIN and SKELAXIN-800 (skeletal muscle relaxant).

ROCHE LABORATORIES Ballroom Foyer
Nutley, New Jersey Booth 1

LIBRIUM—a therapeutic agent for superior, safer, faster control of nervousness, anxiety, tension and other common emotional disturbances without the dulling effect or depressant action of the tranquilizers.

J. B. ROERIG AND COMPANY Ballroom
New York, New York Booth 22

J. B. ROERIG AND COMPANY will welcome members of the medical profession at the company's exhibit of leading specialties and new products. Representatives will be in attendance to answer any questions you may have. Roerig recently introduced a number of new products which representatives at the exhibit will describe and give information on the results of clinical reports.

WILLIAM H. RORER, INC. Boulevard Room
Fort Washington, Pennsylvania Booth 109

ANANASE TABLETS—A new oral fibrin-depolymerizing (Proteolytic) enzyme from vegetable origin.

MAALOX—A pleasant tasting non-constipating antacid in Suspension, Tablets No. 1 and Tablets No. 2.

Representatives will gladly answer questions concerning Rorer Products.

SANBORN COMPANY Ballroom
Waltham, Massachusetts Booth 28

The new SANBORN/FROMMER CELL COUNTER as well as new ELECTROCARDIOGRAPHS of advanced design and function together with the latest models of other instruments for diagnostic use, will be displayed and demonstrated at the Sanborn Company Booth No. 28.

Demonstrations and/or data will also be available on Sanborn instruments for biophysical research—single and multi-channel recording systems, monitoring oscilloscopes and physiological transducers.

Qualified Sanborn representatives will be pleased to answer questions and assist you with technical problems.

SANDOZ PHARMACEUTICALS Boulevard Room
Hanover, New Jersey Booth 97

Sandoz Pharmaceuticals cordially invites you to visit our display at booth #97, where we are featuring SANSERT, MELLARIL, BELLERGAL and CAFERGOT P-B.

Any of our representatives in attendance will gladly answer questions about these and other Sandoz products.

W. B. SAUNDERS COMPANY Sunset Room
Philadelphia, Pennsylvania Booth 59

New Saunders books since last year's meeting include: Current Therapy 1963; Bockus: Gastro-enterology; Warren: Surgery; Bland: Disturbances of Body Fluids; Davidson and Wells: Todd-Sanford's Clinical Diagnosis by Laboratory Methods; and Williamson: Office Procedures.

SCHERING CORPORATION Boulevard Room
Bloomfield, New Jersey Booth 77

A cordial invitation to visit the Schering technical exhibit is extended to all the members of the California Medical Association.

The products listed below will be featured at our booth: CELESTONE®, most active corticosteroid available; CHLOR-TRIMETON®, unsurpassed antihistamine; NAQUIVAL®, effective new antihypertensive.

JULIUS SCHMID, INC. Sunset Room
New York, New York Booth 41

An interesting and informative exhibit featuring IMMOLIN Vaginal Cream-Jel for use without a diaphragm, RAMSES Flexible Cushioned and BENDEX Diaphragms; RAMSES Vaginal Jelly; VAGISEC Liquid and VAGISEC PLUS Jelly and Suppositories for vaginal trichomoniasis therapy; and XXXX (FOUREX) Skin Condoms, RAMSES, SHEIK and SHEIK LUBRICATED Rubber Condoms for the control of trichomonal reinfection.

G. D. SEARLE & CO. Ballroom Foyer
Chicago, Illinois Booth 4

You are cordially invited to visit the Searle booth where our representatives will be happy to answer any questions regarding Searle Products of Research.

SEVEN-UP BOTTLING COMPANY Sunset Room
Los Angeles Booth 43

Displaying and serving chilled 7-Up with serving counter and Electric Refrigerator Cooler.

SHELLEY PROFESSIONAL PRODUCTS, INC.
Los Angeles Boulevard Room, Booth 85

Newly designed and engineered All-Formica Model #600 Shelley "Futura" Examining Table featuring deep, spacious storage drawers that glide on nylon bearings on tracks welded to a steel frame—New contour upholstered top employing polyeurethene foam padding as standard at regular price—Convenient electrical outlets and drawers at the foot of the Table—A remarkable retractable footstep adds to the many conveniences incorporated in this fine Table. Also on display will be Shelley Modular Cabinets.

SHERMAN LABORATORIES Boulevard Room
Detroit, Michigan Booth 89

Elixophyllin—Severe asthmatic attacks are not merely relieved, but *terminated* in 10 to 20 minutes by Elixophyllin, given *orally*. In milder attacks, its speed has been described as "instantaneous."

Wheezing, retrosternal congestion and coughing caused by bronchospasm are usually relieved in 15 minutes following a dose of 45 cc. of Elixophyllin.

Vital capacity increases were noted as soon as 5 minutes after administration. Pick up these data and reports on their clinical significance at the Sherman booth.

SMITH KLINE & FRENCH LABORATORIES
Philadelphia, Pennsylvania Boulevard Room, Booth 113

Our Representatives welcome the opportunity to discuss SK&F products with you and are always ready to be of help in any way they can. Products featured are: 1. Eskatrol®, 2. Dexamyl®, 3. Dexedrine®, 4. Ornade®, and 5. Tuss-Ornade®.

SMITH, MILLER & PATCH, INC. Sunset Room
New York, New York Booth 40

Smith, Miller & Patch, Inc. will feature Lipotriad, a potent combination of lipotropes and oxytropic factors of the B-Complex; Vitron-C, a new hematinic tolerated even by patients with gastric irritability; Bistrimate, oral bismuth therapy for chronic sore throat; and Vasocon-A, a new ophthalmic preparation to relieve conjunctival hyperemia, resulting from allergies, smog, and irritation.

E. R. SQUIBB & SONS Ballroom
New York, New York Booth 19

E. R. Squibb & Sons has long been a leader in development of new therapeutic agents for prevention and treatment of disease. The results of our diligent research are available to the Medical Profession in new products or improvements in products already marketed.

At booth #19, we are pleased to present up-to-date information on these advances for your consideration.

J. W. STACEY, INC. Ballroom Foyer
Palo Alto Booth 7

Stacey's, the largest distributor of medical books in America, will be in attendance with a large display featuring all of the latest important books from all medical publishers, plus the latest information about forthcoming books in each specialty. If you have not received your free copy of Medical Books in Print, be sure to stop at Booth #7—Stacey's will have a limited supply on hand.

THE STUART COMPANY Ballroom
Pasadena Booth 29

A cordial invitation is extended to all members and guests attending this meeting to visit the Stuart Company booth. Specially trained representatives will be in attendance to answer your questions on new products, developed in our modern laboratories, which have particular interest for the medical profession. Products featured are Mylanta, Stuart Prenatal-F and Mulvidren.

TAB PRODUCTS CO. Sunset Room
San Francisco Booth 38

Spacefinder Filing System and Unit Spacefinder Filing System:

Spacefinder Filing Systems are cabinet-enclosed shelf-type filing, in harmonious decorator colors, with smooth working overhead retractable doors.

Unit Spacefinder Filing Systems consist of 4-inch rugged fiberboard boxes on a sturdy steel free-standing frame.

Important savings in time, space and money through modern filing will be demonstrated in this booth on a continuous basis.

TESTAGAR & CO., INC. Sunset Room
Anaheim Booth 72

The professional service representatives of Testagar & Co., Inc. will be happy to pass on the latest information on the use of Heparin Sodium (Hepathrom) as an office procedure in the treatment of acute and chronic atherosclerotic conditions; as a treatment for peripheral artery diseases. Information is also available on the use of Heparin (Hepathrom) as a prophylactic in coronary artery diseases. Information, samples and literature will also be available on Felsules (Chloral Hydrate-Fellows). The latest literature stresses the value of Chloral Hydrate in the geriatric patient.

TRU-EZE MFG. CO., INC. Sunset Room
Burbank Booth 76

"Extra Hands without Added Personnel." Tru-Eze will be exhibiting the New Tru-Trac electronically controlled portable intermittent traction machine. Economically priced, completely versatile and light weight. Automatically takes up to 30 inches of slack pulling preset poundage accurately up to 100 lbs. Hold and Rest timers may be set at intervals of zero to 15 seconds. Length of treatment may be preset up to one hour, signalling the operator when through, completes the cycle and automatically shuts off at zero. Dependable! *Does not* require supervision.

The advantage of the Tru-Trac Traction and Therapy Table with free-wheeling ball-bearing rollers (to reduce friction in lumbar traction) will be demonstrated: also the Tru-Trac Flexion Traction Chair.

THE UPJOHN COMPANY — Ballroom
Kalamazoo, Michigan — Booth 17

Professional representatives of The Upjohn Company are eager to contribute to the success of your meeting. We are here to discuss with you products of Upjohn research that are designed to assist you in the practice of your profession. We solicit your inquiries and comments.

U. S. VITAMIN & PHARMACEUTICAL CORPORATION, New York, New York — Ballroom
Booth 25

DBI—"broad-range" oral hypoglycemic agent. DBI, brand of phenformin (N^1-B-phenethylbiguanide HCl) is distinctly different in chemical structure and physiologic action from the oral hypoglycemic sulfonylureas. It effectively lowers blood sugar and eliminates glycosuria in mild, moderate and severe diabetes. DBI, in combination with insulin, improves regulation of "brittle" adult and juvenile diabetes. In juvenile diabetes, DBI often permits up to 50% reduction in insulin requirements. Also effective in the insulin-resistant and in primary and secondary tolbutamide and chlorpropamide failures. Full details available.

WALLACE LABORATORIES — Ballroom
Cranbury, New Jersey — Booth 24

Wallace Laboratories, Cranbury, New Jersey, exhibit, features information on CAPLA, a new kind of drug for the treatment of hypertension. CAPLA acts specifically on the brain centers that control blood pressure, rather than indirectly or peripherally, like older antihypertensives. It has proved non-toxic in clinical use, and side effects are limited to occasional cases of drowsiness, usually transient in nature.

WARNER-CHILCOTT LABORATORIES — Sunset Room
Morris Plains, New Jersey — Booth 51

GELUSIL®—the physician's antacid—for lasting relief of pain and control of gastric acid by neutralization and adsorption. The unique dual gel formed by GELUSIL protectively coats irritated and eroded mucosa. GELUSIL is inherently nonconstipating—*contains no laxative.*

PERITRATE®—for the patient with coronary artery disease—with or without angina. PERITRATE increases myocardial blood flow and oxygen supply safety—with no significant change in blood pressure, cardiac output or pulse rate.

WESTERN SURGICAL SUPPLY — Boulevard Room
Los Angeles — Booth 88

You will see in Booth 88, the latest in Cardiac Resuscitation equipment. See the new IRON HEART for external cardiac massage, powered by portable pneumatic pump. Factory-trained personnel will demonstrate this equipment in our booth. We will also have on display, the very latest in instruments, diagnostic aids for your examination. We cordially invite you to visit our display.

WESTWOOD PHARMACEUTICALS — Sunset Room
Buffalo, New York — Booth 56

Westwood invites physicians to stop by their booth to discuss their unique dermatological products:

FOSTEX CREAM, LOWILA CAKE, SEBULEX, ALPHA-KERI, FOSTEX CAKE, LOWILA EMOLLIENT, FOSTRIL.

These products are particularly suitable for personal use by physicians and their families who may be plagued with dandruff, acne, dry and itchy skin, and sensitivities to soap. Register, so that we may send prescription units to your home.

WHITE LABORATORIES, INC. — Boulevard Room
Kenilworth, New Jersey — Booth 99

White Laboratories' Exhibit features PERMITIL CHRONOTAB TABLETS (brand of repeat-action tablets of fluphenazine dihydrochloride). PERMITIL CHRONOTAB TABLETS provide uninterrupted, day-long control of anxiety symptoms.

WINTHROP LABORATORIES — Sunset Room
New York, New York — Booth 54

WINSTROL, the new complete "physiotonic" for the underweight, the weak and debilitated. Builds body tissue, confidence and alertness. WINSTROL is highly active orally, simple to administer and suitable for prolonged therapy in most cases.

W.T.S. PHARMACEUTICALS — Sunset Room
Rochester, New York — Booth 67

DESENEX—Most widely prescribed fungicide used in prevention and treatment of athlete's foot and other superficial fungous infections of the skin.

CALDESENE—Provides a lubricating and emollient film which is effective in the prevention or treatment of diaper rash and minor skin irritations.

F. E. YOUNG & COMPANY — Boulevard Room
Chicago, Illinois — Booth 92

F. E. YOUNG & COMPANY, Booth No. 92, will exhibit Young's DILATORS, PSP TEST SET, Young's ALBUMIN TEST and JEN-I-SOL.

Young's Dilators are used in the treatment and prevention of contracted anus, particularly following hemorrhoidectomy; constipation, congenital stricture, prolapse, dysmenorrhea, dyspareunia, perineal dissection and repair following delivery.

AMPAC Rally

GOLD ROOM, CHAPMAN PARK HOTEL
Just Across Wilshire Boulevard
4:00 p.m.—SUNDAY, MARCH 24

OFFICERS AND DELEGATES

General Officers

Omer W. Wheeler, Riverside	President
Samuel R. Sherman, San Francisco	President-Elect
James C. Doyle, Beverly Hills	Speaker of House of Delegates
Ivan C. Heron, San Francisco	Vice-Speaker of House of Delegates
Carl E. Anderson, Santa Rosa	Chairman of Council
Matthew N. Hosmer, San Francisco	Secretary
Dwight L. Wilbur, San Francisco	Editor
Howard Hassard	Executive Director
John Hunton	Executive Secretary
Peart, Baraty & Hassard	Legal Counsel

House of Delegates

TOTAL DELEGATES (443)

DELEGATES EX-OFFICIO (33)

Omer W. Wheeler, Riverside	President
Samuel R. Sherman, San Francisco	President-Elect
James C. Doyle, Beverly Hills	Speaker of House of Delegates
Ivan C. Heron, San Francisco	Vice-Speaker of House of Delegates
Carl E. Anderson, Santa Rosa	Chairman of Council
Matthew N. Hosmer, San Francisco	Secretary
Dwight L. Wilbur, San Francisco	Editor

COUNCILORS

James C. MacLaggan (1964)	First District
Llewellyn E. Wilson (1964)	Second District
Malcolm C. Todd (1965)	Office No. 1, Third District
William F. Quinn (1963)	Office No. 2, Third District
J. Norman O'Neill (1964)	Office No. 3, Third District
Lewis T. Bullock (1965)	Office No. 4, Third District
Joseph P. O'Connor (1963)	Office No. 5, Third District
Franklin F. Ham (1964)	Office No. 6, Third District
Wilbur G. Rogers (1965)	Office No. 7, Third District
James W. Dalton (1964)	Fourth District
John F. Murray (1963)	Fifth District
Burt L. Davis (1964)	Office No. 1, Sixth District
Albert G. Miller (1965)	Office No. 2, Sixth District
Malcolm S. M. Watts (1963)	Office No. 1, Seventh District
Donald M. Campbell (1964)	Office No. 2, Seventh District
John G. Morrison (1963)	Office No. 1, Eighth District
William F. Kaiser (1964)	Office No. 2, Eighth District
Carl E. Anderson (1964)	Ninth District
Dave F. Dozier (1965)	Tenth District
Joseph P. Cosentino (1963)	Office No. 1, Eleventh District
Forest J. Grunigen (1963)	Office No. 2, Eleventh District

ELECTED DELEGATES (410)

Alameda-Contra Costa (31)

Delegates	*Alternates*
Ackerman, Frederick	Adams, Robert
Anderson, Charles	Baker, Edward
Anderson, Conrad	Barron, Gilbert
Armstrong, James	Benson, K. W.
Bagley, Richard	Black, Daniel
Bassett, J. Brandon	Byers, Gilbert
Blasdel, Edward	Cannon, Lawrence
Cobb, B. Otis	Cope, J. Hallam
Cronenwett, Paul	Dimmler, Charles
Dugan, David	Dozier, Thomas
Etheredge, Samuel	Ellis, Grant
Gersten, Samuel	Fisher, Bruce
Goetsch, Carl	Harms, Herbert E.
Goggio, Alfred	Hart, Charles
Harvey, Harold	Hart, Melvin
Hoskins, H. Dean	Henderson, Ernest
Hudson, Charles	Holden, Herbert
Hunnicutt, Arthur	Johnston, Ian
Iwig, Samuel	Kerns, Claude
Kay, Harold	Maloney, Harold
Keig, William	Morrison, J. Evans
Kirk, Ralph	Newkirk, John
Leet, Robert S.	Newton, Paul
Mitchell, Alan	Page, William
Richards, Dexter, Jr.	Parkinson, Earle
Royce, Byron	Peterson, H. Harvey
Stephens, George	Rihn, Richard
Truman, Stanley R.	Ross, Joseph
Tucker, Dan	Taines, Robert
Twigg, Edward	Twiss, Arthur
Wilson, Francis	Whiting, E. Gale

Butte-Glenn (2)

Delegates	*Alternates*
Elmendorf, Thomas	Gibson, Jay O.
Lawrence, W. Sherwood	Murphy, Franklin L.

Forty First (35)

Delegates	*Alternates*
Aquila, Salvatore J.	Anderson, Elmer C.
Beeson, J. Raymond	Angell, A. E.
Bennett, D. Clinton	Atkins, Charles E.
Bosworth, David B.	Austin, Robert L.
Carroll, Vincent P.	Baker, Thomas
Collins, Bruce S.	Boyce, Merle H.
Copeland, Ralph E.	Cain, Richard F.
Cosentino, Joseph P.	Castle, Carroll L.
Cowell, H. Stanley	Cheverton, William G.
Epperson, J. Gordon	Christensen, Joseph R.
Fawns, Lynn	Corey, Robert E.
Feinberg, Munish	Glass, Charles H.
Feist, John P.	Goldberg, Sol
Fiore, John V.	Grasska, William J.
Futterman, Milton S.	Haring, Robert P.
Gordon, Glenn F.	Herzen, Alexander
Hopps, Walter W., Jr.	Hobson, Herbert M.
Houghtaling, Edward	Horowitz, Frederick G.
Hughes, J. Ralph	Johnson, Richard W.
Husted, Russell M.	Kaupke, John M.
Jones, Dwight H.	Kranzdorf, Charles D.
MacCracken, Frank E.	Littlefield, Don C.
Marsh, Dorothy J.	LoGuercio, Henry P.
McGillis, Loron	Lottman, Marvin H.
Oddo, Nicholas V.	McClure, Ray Leslie
Parker, Robert W.	Miller, Arthur E.
Payne, David H.	Myers, Perry Eugene
Phillips, Jordan M.	Pessis, Jack
Schlossberg, Hermon H.	Pyzer, Lloyd E.
Siegel,Herman F.	Randolph, Homer
Silver, Harry J.	Stein, Jack M.
Teale, Stephen P.	Swift, Louise F.
Williams, Silas	Van Maren, Harold B.
Wittmer, Cleo C.	Van Steyn, Gertrude
Yates, Paul D.	West, Walker Wyndham

Fresno (6)

Delegates	*Alternates*
Argo, W. L.	Gray, Clell C., Jr.
Fulmer, Harlan	Ludwig, Charles
Howard, Arthur F.	Polhemus, J. A.
Kass, Robert	Puerta, Frank J.
Smith, Robb	Taylor, David R.
Snyder, L. J.	Whitten, Richard

Humboldt-Del Norte (2)

Delegates	*Alternates*
Loring, Theodore	Anderson, Richard L.
Olson, Fred A.	Henderson, Justus

Imperial (2)

Delegates	*Alternates*
Jaquith, George	Tepper, Sidney M.
Schoensee, Burke E.	Worthman, Robert H.

Inyo-Mono (2)

Delegates	*Alternates*
Denton, Robert W.	Hartwig, W. Ray
Scott, C. L.	Zimmerly, Winfred

Kern (4)

Delegates	*Alternates*
Day, Robert L.	Cunningham, Ralph
Forney, Robert L.	Ellis, John F.
Strongin, Seymour	Iger. Mortimer
Vaughan, J. E.	Osell, Levin N.

Kings (2)

Delegates	*Alternates*
Brookshire. R. W.	Bridwell. Willard
Kerr, Edwin E.	Dittes, William

Lassen-Plumas-Modoc-Sierra (2)

Delegates	*Alternates*
Bross, Willard S., Jr.	Batson. Wilbur C.
Burnett, C. I.	Quinn, William J.

Los Angeles (145)

Delegates	*Alternates*
Abbey, John D.	Abdun-Nur, John A.
Albright. Robert W.	Abo, Stanley
Allin, John G.	Allan, John S.
Anderson, John R.	Allen, Browning E., Jr.
Andler, Maxwell M., Jr.	Alter, Marvin S.
Andrews, Herbert J.	Anderson, William R.
Asher, Leonard M.	Attvah, Albert M.
Bailey, Wilbur	Bailey, William E.
Baker, Francis J.	Baker, Jack W.
Barry, Donald J.	Bales, Jackson
Beatty, Geneva	Barker, Donald E.
Beckerman, George E.	Baro, Walter Z.
Bennett, Ralph L.	Beattie, Arthur S.
Blackmun, Robert L.	Bergman, G. Clyde, Jr.
Bodner, Henry	Blong, Peter H.
Bowen, Gordon T.	Bowton, F. Lowell
Boyle, Joseph F.	Boyd, Harold
Bradford, Fred E.	Brayton, Donald F.
Brennan, John C.	Brown, Robert N.
Briney, Allan K.	Bryan, J. Elder, Jr.
Buehler. George S.	Burrows, Herbert L.
Bullis, John A.	Carlson, Carroll C.
Bullock, Lewis T.	Clark, P. LeMon, III
Carter. Robert V.	Collins, Mary Ellen
Cass, Donald	Compton, Richard B.
Cherry. Ian S.	Condit. Leonard O.
Cobb, Dudley M., Jr.	Cope, Jerome A.
Cole, Clifford B.	Corday, Eliot
Conti, James G.	Crowe, Harold E.
Cook, Eugene Lee	Cruse, Donald R.
Cook, Wells C.	Dallke, Wendell E.
Cosgrove, Jay B.	Demeter, Robert S.
Crane, Edward H., Jr.	Donahue, D. W.
Crane, Jay J.	Doughton, Millard
Crum, Jean F.	Doyle, John B., Jr.
Dean, William I., Jr.	Elshire, H. Donel
Doehring. Paul C.	Evashwick, George
Donath, Douglas	Faeth, William H.
Doria, Carl J.	Failing, Joseph H.
Dorn, Robert M.	Fishel, Howard E.
Doyle, James C.	Franklin, L. Ben
Dummer, Jerome	Frantz, Kieffer E.
Earl, Donald H.	Frie, Robert J.
Eder, David	Frost, Lawrence L.
Edwardes, Arthur F.	Fry, Robert P.
Einstein, Robert A. J.	Glazier, McCleery
Eisele, Harold E.	Gold, Herbert
Evans, William D.	Golden, Robert F.
Feinfield, Arthur	Goldman, Leonard
Fields, Albert	Goldman, Theodore H.
Fields, Irving	Gondek, Frank R.
Fitch, Donald R.	Goodwin, William E.
Fortmann, Daniel	Gray, F. Lyle

Los Angeles *(continued)*

Delegates	*Alternates*
Foster, P. A.	Gregg, Robert H.
Gill, Charles C.	Grimaud, Harry J.
Gooel, Elmer F.	Gruenberg, Herbert M.
Gummess, Glen H.	Haines, Charles L., Jr.
Haining, Robert B.	Hansen, Martin E.
Halasey, Thomas	Hastings, T. Newlin
Hanchett, Richard B.	Hilgert, Frederick L.
Harris, Casimir	Hoagland, Paul I.
Haskell, M. M.	Hoffman, Peter L.
Heiser, Saul	Ireland, Eugene L.
Hertzog, Francis C., Jr.	Irwin, Leslie
Hill, Lowell R.	Isaacs, Julien H.
Hoffman, Eugene F.	Jackson, Donald W.
Hohl, Elizabeth Mason	Jacobs, Laurence L.
Hohl, Mason	Johns, Varner J., Jr.
Holloway, James W.	Kahlstrom, Samuel C.
Horton, James W.	Kahn, Jack L.
Kantola, Bennett W.	Kamens, Leslie
Kearns, Walter M.	Kashiwabara, John E.
Kempf, Paul Ruben, Jr.	Keislar, Henry D.
Kidd, Thomas R.	Kelso, Raymond W., Jr.
Kirchner, Arthur A.	Kiddie, Thomas
Kirchner, Herbert J.	Kruse, Charles A.
Klingbeil, Jerome R.	Kuntz, David H.
Knox, John F.	Kuris, David B.
Kramer, Jack	LaBriola, J. Harold
Kristiansen, Clarence T.	Lask, Salvadore A.
Kuntz, George S.	Lau, Michael W.
La Forge, William C.	Leary, John H.
Lloyd, O. Dale	Longmire. William P., Jr.
Ludwig, J. Lafe	Lynn, Jack
Macdonald, Ian	Malone, Charles M.
Mack, Edward G.	Masters, John B.
Mauer, Edgar F.	McDonald, John B.
Mayne, John C.	McCandless, Harrison
McCleery, Walter S.	McCleary, Jack E.
McGirr, John I.	McLain, Millard H.
McLennan, Robert M.	Miller, Richard W.
McVann, Robert M.	Miner, Ernest M.
Mercer, Marshall M.	Montag, Leonard
Michels, Arthur G.	Morgan, Frank M.
Miller, Richard D.	Oblath, Robert W.
Milliken, Ralph M.	Paschall, Jack, Jr.
Mooney, Herbert S.	Peeke, George O.
Morgan, Henry G.	Perkins, Roy F.
Mumler, William C.	Perry, John W.
Murrieta, A. J., Jr.	Picklesimer, James
Neibling, Harold A.	Plimpton, Edwin B.
Neuenschwander, Robert S.	Pocock, Dean S.
Nixon. Richard W.	Pomeranz, Alfred A.
O'Neill, J. Norman	Poppen, Mayo J.
O'Neil, Mervin B.	Ragan, John T.
Paxton, Frank F.	Reeder, David H.
Petersen. Harold E.	Rolland, Ward M.
Pettit, Richard D.	Rothenberg, Sanford F.
Pheasant, Homer C.	Row, Charles F.
Polito. S. Robert	Rubin, Henry J.
Pollack, John V.	Rudy. Norman E.
Pulido, Venustiano	Sakaguchi, Sanbo
Quinn, William F.	Salkin, Murray R.
Randall. Morton H.	Schade. Frank F.
Reyes, J. M. de los	Schaeffer, Robert C.
Richards, Melvin R.	Schimmel, Irwin
Rogers, Frank A.	Scuderi, S. A.
Ross, Rex L.	Smith. Thayer A.
Rubell, Earl B.	Snell. Marvin V.
Schlesinger. Martin R.	Stauffer, Floyd R.
Schroeder. Ralph L.	Stephens, John S.
Shearer, Sherley K.	Swan, James E.
Sleeter, John W. H.	Thom, John G.
Smart, Reginald H.	Thompson. Walter S., Jr.
Smith, Eldon E.	Thompson. Wm. Benbow, Jr.
Smitter, Robert C.	Thurber, Packard, Jr.
Stein, Justin J.	Todt, Jack C.
Stragnell. Robert	Trumbull, William E.
Strand, Sherman O.	Turbow, Arthur O.
Sullivant. Richard A.	Turrill, Fred L.
Taw, Richard L.	Tyler, George C.
Todd, Malcolm C.	Ulery, Richard M.
Tyroler, Frederic N.	Vanley, Harry T.
Voigt, Philip F.	Van Riesen, Milton H.
Wadsworth, E. E., Jr.	Vogel, Philip J.
Wallace, Keith H.	Von Der Ahe, Clyde
Watson, Robert L., Jr.	Walter, Robert C.
Weber, Robert A.	Watson, John Wm.
Welch, Jack H.	Weiss, Allen H.
Wilkins, Harold E.	Westerbeck, Charles W.
Witherbee, Harold R.	Westphal, Edward A.
Woodruff. John H., Jr.	Wilcox. John C.
Wright, Wesley M.	Wood, Robert C.
Wunderlich, Edwin E.	Woolington, Sam
Zaro, John A., Jr.	Zimmerman, Norval F.

Madera (2)

Delegates	*Alternates*
Cohlan, Wilbur R.	Butler, Kenneth W.
Rowe, Robert B.	Quimby, Smith A.

Marin (4)

Delegates	Alternates
Culmer, J. William	Hurlbut, J. Lyman
Hedin, Roger W.	Mills, Robert L.
Schell, Robert F.	Van Pelt, M. Alden
West, Robert	Weden, Elmer, Jr.

Mendocino-Lake (2)

Delegates	Alternates
Roberson, B. B.	Ivers, Tom
Smalley, Robert B.	Waring, William

Merced (2)

Delegates	Alternates
Harner, Robert C.	Brewer, A. Frank
McDowell, B. E.	Jackson, Edward A.

Monterey (4)

Delegates	Alternates
Clark, Howard E.	Hull, Osman H.
Englehorn, T. D.	Shebl, Joseph J.
Fassett, James R.	Turner, Joseph E.
Miles, Howard C.	Turner, Seymour

Napa (2)

Delegates	Alternates
Brignoli, Walter H.	Ashley, Robert C.
Rose, Edgar Kash	Hemphill, Arthur C.

Orange (15)

Delegates	Alternates
Altman, Richard F.	Anderson, William T.
Ball, Dexter T.	Ball, Robert E.
Donaldson, A. Norton	Bode, Arnold G. H.
Galbraith, Harold F.	Eastman, Henry V.
Gendel, Samuel	Friend, William K.
Hanigan, Thomas E.	Geddes, David
Hunt, Frederick T.	Gerrie, Wallace A.
Paul, Carl J.	Jett, Jim
Pettis, Emmett M.	Kornblum, William A.
Plumb, Hugh J.	Lenahan, William E.
Preston, Richard	Lowe, Waynard W.
Price, J. B.	Mackey, Francis G.
Specht, Oswald S.	Mosier, Laurance A.
Whittaker, L. F.	Rice, Maurice M.
Wickett, William H., Jr.	Thomassen, J. Paul

Placer-Nevada (2)

Delegates	Alternates
Dubin, Nathan	Bailey, Nicholas
Joye, K. M.	Mathewson, John A.

Riverside (5)

Delegates	Alternates
Abbott, Donald	Budenz, Charles
Fitzmorris, Andrew	Ivanoff, John
Garcia, Robert E.	Payton, Robert
Peterson, John R.	Sheehy, John J.
Stone, H. H.	Stone, Vean M.

Sacramento (10)

Delegates	Alternates
Berg, John A.	Airola, Virgil R.
Berman, A. E.	Baker, John M.
Cook, Orris S.	Boyers, L. Morgan
Grayson, Charles E.	Connors, John P.
Horn, Carl E.	Farley, James O.
Martin, James W.	Hause, Donald P.
Pope, Glenn A.	Johnson, Kenneth M.
Schroeder, Frederick A.	Kanner, Harry H.
Teall, Ralph C.	O'Neal, Roy L.
Yant, James H.	Rooney, Pierce A.

San Benito (2)

Delegates	Alternates
Moore, Ernest	Bradt, Jack O.
Quinn, Robert D.	Taylor, Kent

San Bernardino (7)

Delegates	Alternates
Crutcher, Luke F.	Cover, William L.
Halburg, Clarence T.	Gattas, Fred A.
Marsh, Norman E.	Hendrickson, Merlin A.
Melone, Frank C.	Hoag, L. G.
Miano, Ben D. A.	Ogden, Wendell L.
Sprague, Charles P.	Smith, George William
Varden, Arthur E.	Sterling, Allen F.

San Diego (19)

Delegates	Alternates
Carpenter, Walter F.	Allen, Frederic R.
Fairchild, L. H.	Averill, Roy S.
Feeney, Michael J.	Bethard, William F.
Hall, Winston C.	Brumbaugh, Simon C., Jr.
Hanna, Curtis M.	Heywood, Charles W.
Hippen, Robert L.	Kirtland, Howard B., Jr.
Hokr, William K.	Merdinger, Walter F.
Isenhour, Roger C.	Messenger, Harold M.
King, Ralph M.	Moore, E. Vincent, Jr.
Levy, Edward L.	Moore, Stanley A.
Newman, Willard H.	Peabody, Homer D., Jr.
Peck, Samuel	Peck, J. Haddon A., Jr.
Plumb, Robert T.	Powell, E. R.
Robinson, Frank H.	Pruett, Charles E.
Rumsey, John M.	Rumsey, Eugene W.
Skeoch, Gordon D.	Tabor, George L., Jr.
Tancredi, Chester	Wells, John J.
Telford, Joseph W.	
Youel, Milo A.	

San Francisco (35)

Delegates	Alternates
Baer, Charlotte C.	Aird, Robert B.
Bender, William T.	Antipa, August
Burnham, DeWitt K.	Ashford, John W.
Clark, Albert G.	Bates, O. George
Combs, Robert C.	Bricca, C. R., Jr.
Erskine, John M.	Burton, James W.
Fenlon, Roberta	Butler, Edmond D.
Fullenlove, Tom M.	Campbell, Douglas G.
Gallagher, Donald M.	Cappeller, William S.
Gibbons, Henry, III	Castro, Amos J.
Henry, Margaret	Cherney, Leonid
Herrod, Chester E.	Clark, W. Dayton
Herzog, George K., Jr.	Cohn, Bradford
Hopp, Eugene S.	Cook, Robert E.
Howard, Frederick S.	Cowan, John F.
Hurwitz, Samuel	Feldman, Sanford
Leach, Charles W.	Foster, Sidney E.
Lebo, Charles	Fraser, Alexander
McGregor, Mar	Furlong, Joseph J.
Mettier, Stacy R., Jr.	Galgiani, John
Musser, Don C.	Gobar, Robert F.
Pillsbury, Philip	Greco, Vincent H.
Rixford, Emmet L.	Hartwig, Arthur R.
Robinson, Saul J.	Hill, Edward C.
Rochex, Francis	Kushner, Joseph
Saunders, J. B. deC. M.	Leonards, L. N. R.
Schaupp, John B.	Milburn, Lloyd
Sirbu, Abraham B.	Mohr, Selby
Torassa, George L., Jr.	Newsom, William A.
Wayburn, Edgar	O'Gara, Louis A.
Webb, Eugene M.	Salomon, Maurice S.
Webb, Gilbert A.	Samilson, Robert
Weyrauch, Helen B.	Thompson, Mary C.
Williams, A. Justin	Trauner, Lawrence M.
Young, Bradford	Wallace, William B.

San Joaquin (5)

Delegates	Alternates
Armanino, Louis P.	Blinn, John F., Jr.
Benn, James J.	Lee, Dora Ames
Harrington, Donald C.	Nickols, Bruce
Mayo, John F.	Salter, Robert
McNally, John	Williams, George

San Luis Obispo (2)

Delegates	Alternates
Kirk, Stanley	Gaebe, Laurence
Middleton, Joseph G.	Tedone, L. M.

San Mateo (11)

Delegates	Alternates
Brown, Henry A.	Aycinena, Juan
Findley, John W.	Drucker, Edgar F.
Fox, Norman C.	Healy, Francis A.
Hart, Ward L.	James, Robert E.
Hills, Oscar W.	Johnson, Harold P., Jr.
Holmes, Robert O.	Larsen, William G.
Lindsey, Howard W.	Ray, Hartzell H.
Novak, Frank J.	Richanbach, Henry S.
Saidy, John T.	Rossiter, Stanford B.
Smith, Harry F.	Storli, Edgar A.
Thompson, William H.	Willey, Roger W.

Santa Barbara (5)

Delegates	Alternates
Hill, T. K.	Blanchard, John
McNiece, Kenneth	Dereniwski, Edward
Miles, Harold	McGinnis, Robert
Owens, Daniel	Williams, Robert
St. John, James	

Santa Clara (17)

Delegates	Alternates
Besson, Gerald	Adams, Deane T.
Boice, Clyde	Cramer, Harold
Clark, William H.	Elmore, Ernest F.
Dennis, Robert	Giansiracusa, Frank
Foster, Thomas N.	Gualtieri, Anthony C.
Fox, Leon P.	Hull, David I.
Houck, George H.	Ibsen, Maxwell
Liston, Edward	Jennison, M. Harry
Mitchell, Sidney	Johnson, Bert
Peck, Clemmer	Kaufman, S. Fred
Rugtiv, George	Kelly, Allen
Scarborough, C. Gerald	LaVeque, Edgar G.
Silver, Emmanuel	McGann, Benson R.
Skillicorn, Stanley A.	Meyer, Robert W.
Snyder, J. Frederic	O'Neill, Robert
Wilbur, Richard	Upton, Hubert M.
Zobel, Jerome F.	Varney, Dean C.

Delegates	*Alternates*
Santa Cruz (2)	
Bell, Taine	Alsberge, Cary
Spencer, James A.	Vail, James
Shasta-Trinity (2)	
Martin, George A.	Nilssen, William, Jr.
Miller, Charles D.	Polka, Michael
Siskiyou (2)	
Landon, Jack	Pindell, Merl
McGuire, James	Vidricksen, H. L.
Solano (2)	
Garrett, Robert L.	Joseph, Herbert L.
Jones, F. Burton	Schmutz, Melvin A.
Sonoma (4)	
Butler, Robert H.	Barnett, Richard C.
Newman, William J.	Clary, David T.
Sharrocks, Horace F.	Close, Myron B.
Zieber, R. L.	Panting, Norman
Stanislaus (3)	
Hatch, Francis N.	Deyoe, George W.
New, David J.	Pyles, Gordon
Purvis, Robert	Ryan, William H.
Tehama (2)	
Ingle, Wilfred G.	Cooper, Irving V.
Wolfe, Lynn E., Jr.	Weirich, William L.

Delegates	*Alternates*
Tulare (2)	
Feldmayer, James E.	Goettle, James W.
Lavers, George D.	Osgood, Lyle E.
Ventura (3)	
Helbling, Franklin K.	Maguire, J. F.
Huff, W. Cloyce	Hair, C. M.
Moore, J. W.	Nelson, James H.
Yolo (2)	
Sobeck, Frederick J.	Price, Frank W.
Young, Corbin	Robinson, William
Yuba-Sutter-Colusa (2)	
Heckman, John R.	Boyer, Warren J.
Wallace, Robert	Williams, James D.

PAST PRESIDENTS (23)

Ewer, Edward N.	1925
Harris, Junius B.	1931
Reinle, George G.	1933
Peers, Robert A.	1935
Wilson, Harry H.	1940
Molony, Wm. R., Sr.	1942
Schaupp, Karl L.	1943
Goin, Lowell S.	1944
Cline, John W.	1947
Askey, E. Vincent	1948
Kneeshaw, R. Stanley	1949
Cass, Donald	1950
MacLean, H. Gordon	1951
Alesen, Lewis A.	1952
Green, John W.	1953
Morrison, Arlo A.	1954
Shipman, Sidney J.	1955
Charnock, Donald A.	1956
MacDonald, Frank A.	1957
West, Francis E.	1958
Reynolds, T. Eric	1959
Foster, Paul D.	1960
Bostick, Warren L.	1961

AMPAC Rally

GOLD ROOM, CHAPMAN PARK HOTEL
Just Across Wilshire Boulevard

4:00 p.m.—SUNDAY, MARCH 24

House of Delegates Agenda

1963 Annual Session

Embassy Room
Ambassador Hotel

Speaker . . . . James C. Doyle, Beverly Hills
Vice-Speaker . . . . Ivan C. Heron, San Francisco
Secretary . . . . Matthew N. Hosmer, San Francisco

FIRST MEETING

Saturday, March 23, at 7:00 p.m.

ORDER OF BUSINESS

1. Call to order.
2. Report of Committee on Credentials, and Organization of the House of Delegates.
3. Roll call.
4. Announcement and approval of Reference Committees.
    - (a) Committee on Credentials. (Delegates must register with the Committee.)
    - (b) Reference Committee on the Reports of Officers, the Council, the Commissions and Standing and Special Committees. (Reference Committee No. 1.)
    - (c) Reference Committee on Finance, to review the reports of the Secretary and the Executive Secretary and to study and make recommendations to the House of Delegates on the budget submitted by the Council and the amount of dues for the ensuing year. (Reference Committee No. 2.)
    - (d) Reference Committee on Resolutions and New and Miscellaneous Business. (Reference Committee No. 3.)
    - (e) Reference Committee (No. 3A) on Resolutions and New and Miscellaneous Business.
    - (f) Reference Committee on Amendments to the Constitution and By-Laws. (Reference Committee No. 4.)
    - (g) Reference Committee on C.P.S. Business.
5. Address by President of the Woman's Auxiliary to the C.M.A. Mrs. Floyd Anderson.
6. Address by President—Presentation of 50-Year Awards.
7. Miscellaneous announcements by the Speaker. (Stenographic service to secure copies of resolutions, etc.)
8. Report of the President—Omer W. Wheeler.
9. Report of the President-elect—Samuel R. Sherman.
10. Report of the Speaker of the House of Delegates—James C. Doyle.
11. Report of the Vice-Speaker of the House of Delegates—Ivan C. Heron.
12. Report of the Trustees of the California Medical Association—Omer W. Wheeler.
13. Report of Physicians' Benevolence Fund, Inc.—Omer W. Wheeler.
14. Report of the Secretary—Matthew N. Hosmer.
15. Report of the Editor—Dwight L. Wilbur.
16. Report of the Executive Secretary—John Hunton.
17. Report of Legal Counsel—Peart; Baraty and Hassard.
18. Report of the Committee for Emergency Action—Omer W. Wheeler.
19. Report of the Council—Carl E. Anderson, Chairman.
20. Report of C.P.S. Board of Trustees—John G. Morrison, Chairman, Board of Trustees.
21. Report of ad hoc Committee No. 1, 1962 House of Delegates—Reginald H. Smart, Chairman.
22. Report of ad hoc Committee No. 2, 1962 House of Delegates—Ralph C. Teall, Chairman.
23. Reports of Commissions.
    - (a) Commission on Cancer—Burt L. Davis, Palo Alto.
    - (b) Commission on Community Health Services—Harold Kay, Oakland.
    - (c) Commission on Medical Education—Albert C. Daniels, San Francisco.
    - (d) Commission on Medical Services—John F. Murray, Fresno.
    - (e) Commission on Professional Welfare—Arthur A. Kirchner, Los Angeles.
    - (f) Commission on Public Agencies—James C. MacLaggan, San Diego.
    - (g) Judicial Commission—Donald A. Charnock, Los Angeles.
24. Reports of Other Committees.
    - (a) Bureau of Research and Planning—Gerald W. Shaw, Santa Monica.
    - (b) Bureau on Communications—Warren L. Bostick, San Rafael.
    - (c) Committee on Legislation—Dan O. Kilroy, Sacramento.
    - (d) Finance Committee—Ralph C. Teall, Sacramento.
    - (e) Medical Executives Conference—William T. Nute, San Diego.
    - (f) Delegates to the A.M.A.—Dwight L. Wilbur, San Francisco.
    - (g) Liaison Committee to C.P.S.—Donald D. Lum, Alameda.
    - (h) Liaison Committee to the State Bar of California—Francis E. West, San Diego.
    - (i) Liaison Committee to the California Hospital Association—James C. MacLaggan, San Diego.
25. Old and Unfinished Business.
26. New Business.

SECOND MEETING

Tuesday, March 26, at 4:00 p.m.

(To be recessed and reconvened at 9:30 a.m., Wednesday, March 27)

Order of Business

1. Call to order.
2. Supplemental report of Credentials Committee.
3. Roll call.
4. Secretary's announcement of Council's selection of time and place for the 1964 annual session.
5. Election of officers:
   - (a) President-elect.
   - (b) Speaker.
   - (c) Vice-speaker.
   - (d) Councilors (three-year terms).
     - (1) Third District—Office No. 2—William F. Quinn, Los Angeles (term expiring).
     - (2) Third District—Office No. 5—Joseph P. O'Connor, Pasadena (term expiring).
       Third District—Los Angeles County.
     - (3) Fifth District—John F. Murray, Fresno (term expiring).
       Fifth District—Calaveras, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Joaquin, Stanislaus, Tulare and Tuolumne Counties.
     - (4) Seventh District—Office No. 1—Malcolm S. M. Watts, San Francisco (term expiring).
       Seventh District—San Francisco County.
     - (5) Eighth District—John G. Morrison, San Leandro (term expiring).
       Eighth District—Alameda and Contra Costa Counties.
     - (6) Eleventh District—Office No. 1—One-year term—Joseph P. Cosentino, Sacramento (interim appointment expiring).
     - (7) Eleventh District—Office No. 2—Two-year term—Forest J. Grunigen, Los Angeles (interim appointment expiring).
       Eleventh District—State of California.
   - (e) Delegates to the American Medical Association: Delegates and Alternates to the American Medical Association are elected for terms of two calendar years. The Delegates and Alternates to be elected at this meeting will serve for two calendar years starting January 1, 1964, except as otherwise noted.
     - (1) Henry Gibbons III, San Francisco (term expiring).
     - (2) John M. Rumsey, San Diego (term expiring).
     - (3) Eugene F. Hoffman, Los Angeles (term expiring).
     - (4) Warren L. Bostick, San Rafael (term expiring).
     - (5) J. B. Price, Santa Ana (term expiring).
     - (6) Ralph C. Teall, Sacramento (term expiring).
     - (7) James C. Doyle, Beverly Hills (term expiring).
     - (8) Donald A. Charnock, Los Angeles (term expiring).
     - (9) Charles B. Hudson, Oakland (term expiring).
     - (10) H. Milton VanDyke, deceased—one-year term expiring December 31, 1963.
       - (a) Same office for two-year term, calendar years 1964 and 1965.
     - (11) New Office No. 1—one-year term expiring December 31, 1964.
       - (a) Same office for two-year term, calendar years 1964 and 1965.
     - (12) New Office No. 2—two-year term for calendar years 1963 and 1964.
     - (13) New Office No. 3—two-year term, calendar years 1963 and 1964.
   - (f) Alternates to the American Medical Association. All terms expiring. All offices for two-year terms starting January 1, 1964, except as otherwise noted.
     - (1) Robert Combs, San Francisco (alternate to Henry Gibbons III).
     - (2) Francis E. West, San Diego (alternate to John M. Rumsey).
     - (3) Edward H. Crane, Jr., Inglewood (alternate to Eugene F. Hoffman).
     - (4) Walter H. Brignoli, St. Helena (alternate to Warren L. Bostick).
     - (5) Donald C. Dodds, Oakland (alternate to J. B. Price).
     - (6) J. E. Vaughan, Bakersfield (alternate to Ralph Teall).
     - (7) Malcolm C. Todd, Long Beach (alternate to James C. Doyle).
     - (8) Carl M. Hadley, San Bernardino (alternate to Donald A. Charnock).
     - (9) Wilbur G. Rogers, Glendale (alternate to Charles B. Hudson).
     - (10) Alternate to New Office No. 1—one-year term, 1963.
       - (a) Same office for two-year term, calendar years 1964 and 1965.
     - (11) Alternate to New Office No. 2—two-year term, calendar years 1963 and 1964.
     - (12) Alternate to New Office No. 3—two-year term, calendar years 1963 and 1964.
6. Election of C.P.S. Trustees (three-year terms): Report of C.M.A. Council as Nominating Committee.

   Incumbents, terms expiring:

   Dudley M. Cobb, Jr., M.D., not eligible for reelection;
   John R. Hilsabeck, M.D., not eligible for reelection;
   John G. Morrison, M.D., not eligible for reelection;
   Herman H. Stone, M.D.;
   William H. Thompson, M.D.;
   Mr. Ransom Cook.

7. Announcement by Secretary.
   Council's nominations of members of Commissions and Committees (for approval by the House of Delegates).
8. Reports of Reference Committees:
   (a) Reports of Reference Committee No. 1 on Reports of Officers, the Council, Commissions and Standing and Special Committees.
   (b) Report of Reference Committee No. 2 on Reports of the Secretary, the Executive Secretary, and the budget and dues.
   (c) Report of Reference Committee No. 3 on Resolutions and New and Miscellaneous Business.
   (d) Report of Reference Committee No. 3A on Resolutions and New and Miscellaneous Business.
   (e) Report of Reference Committee No. 4 on Amendments to the Constitution and By-Laws.
   (f) Report of Reference Committee on C.P.S. Business.
9. Unfinished Business.
10. New Business.
11. Presentation of Officers:
    President.
    President-elect.
    Speaker.
    Vice-speaker.
12. Presentation of certificate to retiring president Omer W. Wheeler.
13. Approval of minutes. (Committee to edit.)
14. Adjournment.

JAMES C. DOYLE, *Speaker*
MATTHEW N. HOSMER, *Secretary*

PROPOSED AMENDMENTS TO CONSTITUTION

Amendments to the Constitution of the California Medical Association are required to lie on the table for one year before being voted upon. Six proposed amendments to the Constitution were introduced in the 1962 House of Delegates. Under the terms of the Constitution, these were subject to review by the Reference Committee in the 1962 House of Delegates and will also be reviewed by Reference Committee No. 4 in the 1963 House before being voted upon in that session. In five instances the 1962 Reference Committee made specific recommendations which were adopted by the House and are shown following the proposals.

In some instances the Reference Committee suggested that proposed amendments to the Bylaws, which need lie on the table only twenty-four hours, also be deferred until 1963 because of their association with constitutional amendments on the same subject. In the section on Bylaw Amendments following this section, such deferral will be noted.

The following Amendments to the Constitution were offered in 1962, all of them placed on the table for definitive action in 1963.

* * *

1962 AMENDMENTS

Six proposed amendments to the Constitution were introduced in the 1962 House of Delegates. They were reviewed by Reference Committee No. 4 of the 1962 House of Delegates and will also be reviewed by Reference Committee No. 4 of the 1963 House. In certain instances the 1962 Reference Committee made certain specific recommendations which were adopted by the House.

CONSTITUTIONAL AMENDMENT No. 1

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Article I, Section 3 of the Constitution of the California Medical Association as now written be deleted and this section to read as follows:

"This Association is an organization composed of the component medical societies and their members, the House of Delegates, the Council, the Scientific Board, the Scientific Assembly, Bureaus, Commissions and Standing Committees."

* * *

CONSTITUTIONAL AMENDMENT No. 2

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Article III, Section 1, be amended by deleting the word "and" at the end of subsection (c), and by adding a new subsection (d) to read as follows:

"(d) Ex-officio with the right to vote, eighteen (18) members of the Scientific Board selected as provided in the Bylaws, and"

The present subsection (d) shall be redesignated (e).

* * *

CONSTITUTIONAL AMENDMENT No. 3

Author: Samuel R. Sherman.
Representing: The Council.

Resolved: That Article III, Part B, Section 9, of the Constitution of the California Medical Association shall be amended by inserting a new subparagraph (c) and redesignating the present subparagraph (c) as (d), and the present subparagraph (d) as (e). The new subparagraph (c) shall be inserted immediately after subparagraph (b) and shall read as follows:

"(c) One (1) member of the Executive Committee of the Scientific Board to be elected by the Executive Committee of that body from representatives of the scientific sections or members-at-large."

* * *

CONSTITUTIONAL AMENDMENT No. 4

(Printed with Action following Constitutional Amendment No. 5)

* * *

CONSTITUTIONAL AMENDMENT No. 5

Author: Dwight L. Wilbur.

Resolved: That Article III, Part A, Section 1, be amended by deleting the word "and" at the end of subsection (c), and by adding a new subsection (d) to read as follows:

"(d) Ex-officio, with the right to vote, the members of the Scientific Board, and"

The present subsection (d) should be redesignated as (e).

ACTION: The House adopted a motion directing the Council to appoint a committee to make a study and submit a report to the delegates and alternates at least thirty days before the next annual meeting concerning the membership requirements, voting procedures and organization of the scientific sections contemplated in Constitutional Amendments Nos. 1, 2, 3 and 5.

* * *

CONSTITUTIONAL AMENDMENT No. 4

Author: Los Angeles delegation.

WHEREAS, the Council of the C.M.A. is an important group in carrying on the activities of the C.M.A.; and

WHEREAS, it is important that the members of the Council be responsive to the desires of the majority of the members of the C.M.A.; and

WHEREAS, a democratic organization provides a vote to all its members; now, therefore, be it

Resolved: That the Constitution of the C.M.A., Article III, Part B, Section 11, be amended to read as follows:

"SECTION 11—Election of Councilors

"District Councilors shall be elected by the vote of the members, entitled to vote, from each District, in the manner and at the time specified in the Bylaws."

and be it further

Resolved: That the Bylaws of the C.M.A. be amended to provide for the election of District Councilors in accordance with this Constitutional amendment.

ACTION: Constitutional Amendment No. 4 (together with Bylaw Amendment No. 12 printed under 1962 Bylaw Amendments) was referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next annual session.

* * *

CONSTITUTIONAL AMENDMENT No. 6

Author: Allyn J. McDowell.
Representing: Los Angeles.

Resolved: That the Constitution of the California Medical Association be amended by adding to Article I, Section 2, the following:

"This Association shall not have the right to enter into a contract with any person, firm, or agency of any kind with respect to the practice of medicine or fees for such practice."

BYLAW AMENDMENTS FOR ACTION IN 1963

Two proposed amendments to the Bylaws introduced in the 1962 House of Delegates were, on recommendation of the Reference Committee and vote of the House, deferred for consideration until 1963. These are shown here as introduced in 1962 and as identified, numerically, in the 1962 meeting.

The Reference Committee also suggested that a special committee be established, to review these deferred amendments. This committee, which has been established by the Speaker, will review all amendments to the Constitution and the By-Laws which relate to the structure of the Association.

Shown below are the amendments to the By-Laws introduced in 1962 and deferred for action in 1963.

BYLAW AMENDMENT No. 12

Author: Los Angeles delegation.

WHEREAS, the Council of the C.M.A. is an important group in carrying on the activities of the C.M.A.; and

WHEREAS, it is important that the members of the Council be responsible to the desires of the majority of the members of the C.M.A.; and

WHEREAS, a democratic organization provides a vote to all its members; now, therefore, be it

Resolved: That the Bylaws of the C.M.A., Chapter VIII, Section 6 and Section 6.5 be amended to read as follows:

"SECTION 6—Election of District Councilors in Districts Having One or More Councilors

"The members of each component society shall elect the number of District Councilors to which the component society is entitled. At least sixty (60) days prior to the next scheduled session of the House of Delegates, the Secretary of each component society shall forward to the Secretary of the Association, on forms provided by the Association, the names and addresses of those District Councilors, so elected, and shall certify thereon, the term of service of each individual Councilor.

"District Councilors shall be elected, by the districts, at the same time and manner that Delegates and Alternates to the House of Delegates of the Association are elected by their respective component societies.

"Districts, in which Councilor vacancies are about to occur, shall, by secret ballot and majority vote, of the members of the district eligible to vote, and voting, elect a District Councilor to fill each vacancy, from such district, to serve for the ensuing term.

"Where new offices are created under the terms of Article III, Part B, Section 9(a) of the Constitution, each such new office shall be numbered serially with those already existing, and shall carry an initial term extending to the same date as has been previously established for offices in the same numerical sequence, heretofore established, and thereafter for a term of three (3) years."

and be it further

Resolved: That Section 6.5 of Chapter VIII of the Bylaws of the C.M.A. be repealed and stricken from the Bylaws.

ACTION: Bylaw Amendment No. 12 (together with Constitutional Amendment No. 4 printed under 1962 Constitutional Amendments) was referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next annual session.

BYLAW AMENDMENT No. 13

Author: Allyn J. McDowell.
Representing: Los Angeles.

WHEREAS, the C.M.A. Bylaws have heretofore provided for a referendum vote of all the members only at the discretion of either the Council or the House of Delegates; and

WHEREAS, these two referring bodies constitute the very bodies concerning whose decisions any appeal of the members might be needed or sought; and

WHEREAS, it is inconsistent with democratic principles that members of this Association should thus in effect have no right of appeal concerning actions of the Council or House of Delegates; now, therefore, be it

Resolved: That Chapter XII, Section 1 be amended by adding the following:

"Any action taken by the Council or by the House of Delegates may be referred to all of the active members of the Association for their vote for or against repeal of such action if a petition requesting such a referendum is filed with the president of the Association within sixty days after the action is taken and if the petition is signed by a number of active members amounting to more than twice the number of voting delegates at the prior meeting of the House of Delegates. This number of petitioners shall constitute a referring body"; and be it further

Resolved: That Chapter XII, Section 2 be amended by adding the following:

"Whenever a referendum vote is initiated through a petition of appeal the petition shall name an active member as the initiator and that member shall have the privilege of selecting or composing a written argument of 1,000 words or less to be presented with the ballot on behalf of the petitioners."

ACTION: Referred to a special ad hoc committee to be appointed by the Speaker with instructions to study the proposals and make a report to the House of Delegates at its next Annual Session.

AMPAC Rally

GOLD ROOM, CHAPMAN PARK HOTEL

Just Across Wilshire Boulevard

4:00 p.m.—SUNDAY, MARCH 24

ANNUAL REPORTS FOR 1962

FOREWORD

The publication of reports of 1962 activities has been varied somewhat this year. There follow at this time several reports which are believed to be of interest to the entire membership of the Association. These will also be printed in the *Annual Reports Bulletin* which will go to all members of the House of Delegates.

Not appearing at this time are the reports of the several commissions, their committees and the various other special or Council committees. These will be published in the *Annual Reports Bulletin* and copies furnished to each member of the House of Delegates. Additional copies will be available later in the year for any member who may wish to review the reports which are not printed in the Journal.

This procedure has been adopted both as a means of conserving journal space and funds but also with the thought that by eliminating the "dead time" between receipt of copy and publication of the journal, commission and other reports may be prepared at a later date and thus be more up-to-the-minute than would be possible otherwise.

REPORT OF THE
Executive Secretary

To the President and the House of Delegates:

This report is prepared by the Executive Secretary but is actually a report in behalf of the entire staff of the Association. It will, as in the past, be divided into the principal areas of responsibility and administration of the entire staff.

1. *General.* The California Medical Association has undergone a continuous process of growth for the past quarter-century. Its membership has increased more than 300 per cent in the past twenty years, in direct proportion to the growth of the population of the state. A consistent physician-population ratio has been maintained throughout this period.

As membership grows, new ideas are developed and new areas where the members, in large or small segments, require and call for services from the state organization. As these demands accumulate and are given official sanction by the Council and the House of Delegates, implementation must be provided by the staff in the form of additional office space, added personnel, new equipment, additional telephone services, more supplies and all the items that go into a business operation.

In the past few years the C.M.A. has gone through a rapid and large growth in size. It has added services, e.g., the Bureau of Research & Planning, which are not matched in any other medical organization in the country, and it has perforce adjusted its entire operating structure to meet the increased load placed on all facilities.

This rapid rate of growth has leveled off in the past year and it is likely that the size of the organizational structure in the next year or two will remain more or less static. As additional projects are approved, necessary adjustments will be made.

2. *Personnel.* At the close of 1962 the Association had 53 employees on its payroll, one less than a year earlier. Of the total, one was a part-time employee and two were janitorial employees engaged in keeping the headquarters building clean and shining.

It is not anticipated at this time that any increase in personnel will be required to maintain existing approved programs. However, approvals given in the past to specific programs and not put into effect may add to the personnel roster and must be provided for in the budget prepared for the coming fiscal year. For example, the Scientific Board already approved may call for additional personnel; if possible, changes in assignments for present personnel will be made to accommodate this activity if that appears possible.

In the coming year it may become necessary to employ additional personnel to handle the increased load placed on the organization by a large increase in membership. Membership gains such as the unification program consummated in 1962 with the California Osteopathic Association represent large and immediate demands for service. In addition, they add to the anticipated work load for the future by virtue of their very size.

All personnel in the office are subject to variations in their assignments and are not frozen in a particular function to the disregard of others. Where emphasis on one project declines and on another increases, personnel are reassigned to the duties more important at the time.

3. *Financial.* Another report in this issue outlines the entire financial picture of the Association and its affiliated organizations for the fiscal year ended June 30, 1962. Complete reports of assets and liabilities and of operating statements for the fiscal year are shown as reported by independent auditors.

A brief review of these reports for the Association shows that the year was completed with a net balance of $25,509, slightly more than the balance of $23,241 reported for the preceding year. Income from members' dues was $1,262,918, an even 9 per cent higher than the $1,158,513 for the preceding year. Operating expenses were also 9 per cent above the 1961 fiscal year, $1,237,409 as against $1,158,513.

Administrative costs were $410,916 for the fiscal year, up 6.2 per cent from the $386,990 shown for the year earlier, and expenses for scientific, educational and public relations activities were $826,493, or 10.45 per cent above expenses for the preceding year of $748,282. The journal showed a decline of 11.1 per cent in advertising income, from $207,230 to $184,256, and net balance for the year was $18,558, compared with $35,255 for the 1961 fiscal period.

For the current fiscal year, to end June 30, 1963, it would appear that budget estimates will be pretty well met and that a small net balance will result, exclusive of the costs of campaigning in behalf of Proposition 22. The expense of this campaign was not budgeted a year ago but was taken from available funds and from borrowings. The tremendous success of this measure at the polls is a welcome sight, since failure would have meant another costly campaign in a later year. The proposition was counted upon by both the medical and osteopathic associations as essential to the orderly unification of the two professions.

At the same time, the need for financing unbudgeted demands of this type has brought into focus the need of reestablishing within the Association a reserve fund which may be drawn on when occasions of this magnitude arise. For some years the reserve funds of the C.M.A. have been maintained in a fund representing government bonds. These bonds are today selling at a substantial discount from their cost and face values. Rather than sell bonds at a loss, the Association has chosen to retain the investment and use the bonds for collateral for borrowing.

Similarly, it should be made plain that for some years a "floating reserve" running into six figures was maintained in the form of short-term investments. Over a period of years this reserve has been depleted and today when operating funds are required, usually at the end of the calendar year, it is necessary to borrow. The headquarters building was purchased without asking for a dues increase and without having to market securities at a price which would mean a loss. The budget prepared for the 1963-1964 fiscal year recognizes the need of replacing the floating, or available reserve. If this can be done over a period of several years, the Association will be able to meet unbudgeted costs of major items and to reduce its bank borrowing to a minimum. The savings in interest, if this can be accomplished, argue forcefully for placing such an accrual item in the budget.

4. *Membership.* The Association showed another gain in active membership in 1962, as it has done in each of the past 25 years or more. The increase in 1962 was more dramatic, however, with the addition of the Forty First Medical Society. As of November 1, 1962, active membership was 19,791, an increase of 12.56 per cent over the 17,583 membership shown a year earlier. Without the addition of 1,801 active members in the Forty First, active membership gained only 407, or 2.3 per cent of the year. This compares with a gain of 516 members (3 per cent) in the preceding year and 585 members (3.55 per cent) two years earlier.

Of the 407-member increase, just about one-half was registered in Los Angeles and Orange Counties. The balance was distributed among 20 other component societies. Offsetting these gains, membership losses were shown in 13 societies, while five showed no change.

The record of membership by component societies as of November 1, 1962, and a year earlier, follows:

Active Membership in the C.M.A. by Component Societies

Societies	Nov. 1, 1961	Nov. 1, 1962
Alameda-Contra Costa	1,540	1,566
Butte-Glenn	91	91
Fresno	294	293
Forty First	......	1,801
Humboldt-Del Norte	89	86
Imperial	53	50
Inyo-Mono	9	10
Kern	228	226
Kings	34	33
Lassen-Plumas-Modoc	25	26
Los Angeles	7,226	7,341
Madera	18	17
Marin	193	205
Mendocino-Lake	59	61
Merced	57	55
Monterey	190	195
Napa	78	80
Orange	652	737
Placer-Nevada-Sierra	72	72
Riverside	246	255
Sacramento	471	483
San Benito	9	9
San Bernardino	358	358
San Diego	958	989
San Francisco	1,745	1,778
San Joaquin	234	230
San Luis Obispo	88	86
San Mateo	515	533
Santa Barbara	248	259
Santa Clara	816	865
Santa Cruz	104	107
Shasta-Trinity	71	70
Siskiyou	24	24
Solano	79	76
Sonoma	170	178
Stanislaus	158	160
Tehama	19	18
Tulare	111	107
Ventura	147	150
Yolo	49	54
Yuba-Sutter-Colusa	55	57
TOTAL	17,583	19,791

5. CALIFORNIA MEDICINE. The journal has continued in its usual format in the past year, with the single exception that the overall page size has been increased slightly. This brings the magazine into one of four size groups which the advertisers and their agencies have promoted as a means of standardizing their own production needs. For CALIFORNIA MEDICINE this has meant simply a slight increase in the amount of white space per page, making the journal the same size as the *Journal A.M.A.*

During the year an arrangement was concluded with the publishers of *Northwest Medicine*, which represents the state medical associations in Washington, Oregon and Idaho. Under this arrangement, CALIFORNIA MEDICINE has assumed the national advertising representation of the northern journal and has been enabled to offer the eastern advertisers the opportunity of blanketing the whole Pacific Coast area with one order and one billing. Billing and collecting, as well as sales representation, are handled in the headquarters office under a fixed fee arrangement which permits the C.M.A. to secure more adequate sales representation and allows *Northwest Medicine* to operate under a more economical program than formerly. The financial effect of this arrangement will not be apparent until the next annual audit is made but preliminary returns indicate that the arrangement will be mutually satisfying.

The journal continues its position of leadership among state and regional medical publications. Its circulation continues to increase and its recognition by physicians and medical organizations nationally and internationally appears to be spreading ever wider. Recently the office was visited by officers of a large state medical association who studied the entire production plan of the journal as a program to be emulated.

6. *Annual Session.* As of the close of 1962, plans for the 1963 Annual Session are well along and there is every indication that a record registration will attend. Plans for scientific sessions are now made several years in advance and provision is made for the inclusion of up-to-date material and basic science reviews as well. Technical exhibits have attracted a large number of exhibitors, to the point of capacity. Scientific exhibits will be omitted at this meeting because of lack of both space and interest by member researchers.

Plans for annual meetings continue to be plagued by lack of suitable space for the various functions which comprise a large meeting of this type. The Ambassador Hotel in Los Angeles will house the coming meeting. In 1964, the Biltmore Hotel in Los Angeles will be used and in 1965 the session will return to San Francisco. New hotel construction in San Francisco may tend to ease the lack of space there but this is not yet subject to final determination.

6. *Conclusion.* The size of the California Medical Association, both in membership and in interests, continues to pose a challenge for your staff. Over the years the Association has been able to attract to its staff a personnel with varied talents, all of which are at the service of the officers, commissions or other groups which have need for special services.

Changes in programs or in emphasis on programs will be met, so far as possible, by the present staff members. With the Association in a dynamic stage of its existence, changes are bound to occur and will be accommodated with a minimum of additional personnel. The dedicated members of the present staff will continue to carry on their present obligations and to assume such new ones as may be assigned. This appears to be a time for consolidation of the growth trend noted in the past few years.

In behalf of the entire staff, may I extend our heartfelt thanks to the officers, councilors, commission and committee members and all those physicians with whom we have been privileged to work. They are most generous in their time and their interest and represent the backbone that is needed to support a large membership organization.

Respectfully submitted,
John Hunton, *Executive Secretary*

REPORT OF
Physicians' Benevolence Fund, Inc.

To the House of Delegates:

Physicians' Benevolence Fund Inc. continues to operate for the assistance of physicians or their dependents who are in financial straits and may require funds temporarily to meet demand placed upon them by illness, accident or death.

This fund has operated for more than 20 years and has at all times given prompt assistance in needy cases. In addition, the fund contributes funds each month to Los Angeles Physicians' Aid, which maintains both a retirement and a nursing home for physicians and their family members.

Contributions to the fund are made by the C.M.A. at the rate of $1 per active member each year, by the Woman's Auxiliary which donates generously each year, and by miscellaneous contributions, some of them in the memory of deceased physicians.

The financial reports of the fund, prepared by independent auditors, are printed elsewhere in this issue and show a successful year of operation, where all demands for assistance were met and a surplus was accumulated for the year. All surplus becomes available for investment and the investment account provides an additional source of income.

The officers of the fund are appointed by the Council from the Council membership and operations are carried on under an operating committee composed of Doctors Ford P. Cady and Elizabeth Mason Hohl of Los Angeles, Clyde L. Boice of Palo Alto, Don Musser and Alexander Fraser of San Francisco and George Wolf of Fresno. The officers of the fund are most grateful to the operating committee members for their constant vigilance and their prompt and decisive action when cases of need arise.

Respectfully submitted,
Omer W. Wheeler, *President*

REPORT OF THE
Finance Committee

To the President and the House of Delegates:

The Finance Committee is a special committee of the Council, appointed annually from the Council membership. Its functions are to oversee the financial operations of the Association, to prepare an annual budget and to review all requests for financial appropriations during the year which are beyond the budget items already approved and in force.

The Council follows a policy which requires that all requests for funds beyond the budget must be considered by this committee and the committee's recommendation considered prior to the time the Council votes on the request. This policy permits an objective evaluation of money requests and allows the Council to pass on to a small committee of five the discussion of finances which would otherwise occupy the entire attention of the Council.

During 1962 the Finance Committee has met on numerous occasions, some of them during Council meetings, and has carried out its assigned duties. The committee has also studied a proposed budget for the 1963-1964 fiscal year and has tendered it to the Council, from which it will be referred to the House of Delegates.

Financial reports covering the operations of the Association and its affiliated organizations are printed elsewhere in this issue. These are prepared by independent auditors and give the complete financial structure and operating picture for the fiscal year ended June 30, 1962. Members of the Finance Committee will be available at reference committee hearings in the House of Delegates to discuss these reports and the proposed new budget.

Respectfully submitted,
Burt L. Davis, *Chairman*

Statement of Net Assets June 30, 1962

EXHIBIT A

ASSETS		
Cash		$ 63,103
United States Treasury bills—at cost (market value—$249,755)		248,276
Accounts receivable, net		34,966
Notes receivable—Central California Blood Bank	$110,500	
Less reserve	110,500	....
Other notes receivable:		
Trustees of the California Medical Association	$220,000	
Six Ninety Three Sutter Publications, Inc.	4,000	224,000
Furniture and fixtures (at nominal value)		1
Accrued interest		1,479
Prepaid expense and deferred charges:		
Insurance	$ 1,608	
Retirement program premium	10,570	
Deposits	1,070	
Other	1,383	14,631
Total		$586,456
LIABILITIES, DEFERRED INCOME, AND RESERVE:		
Accounts payable:		
American Medical Education Foundation	$171,520	
Other	85,748	$257,268
Deferred income:		
Commission on Medical Education	$ 10,000	
Other	673	10,673
Reserve for past service annuity premiums (Note 1)		18,687
Total		$286,628
NET ASSETS (Note 2) (Exhibit B)		$299,828

See notes to financial statements

Statement of Income Expenditures and Net Assets for the Years Ended June 30, 1962 and 1961

EXHIBIT B

	YEAR ENDED JUNE 30	
	1962	1961
INCOME:		
Dues and general:		
Membership dues less portion allocated to California Medicine subscription (Note 2)	$1,230,568	$1,113,719
Fee for collection of American Medical Association dues	6,049	4,238
Interest earned	7,621	5,215
Other	122	86
Total	$1,244,360	$1,123,258
Official journal California Medicine:		
Advertising	$ 184,256	$ 207,230
Nonmember subscriptions	4,099	2,266
Reprints, net	1,531	57
Total	$ 189,886	$ 209,553
Less expenditures (Schedule 1)	226,752	228,592
Direct (cost) gain	$ *(36,866)*	$ *(19,039)*
Allocated portion of members' dues	55,424	54,294
Total	$ 18,558	$ 35,255
Total Income	$1,262,918	$1,158,513
EXPENDITURES (Schedule 1):		
Administration	$ 410,916	386,990
Scientific, educational, and public relations	826,493	748,282
Total	$1,237,409	$1,135,272
EXCESS OF INCOME OVER EXPENDITURES FOR THE YEAR	$ 25,509	$ 23,241
OTHER CREDITS (DEBITS):		
Reduction in reserves on account of payment on loans		$ 14,244
Expenses applicable to prior years	$ *(1,300)*	
Other Credits (debits)	$ *(1,300)*	$ 14,244
NET ASSETS:		
Increase for the year	$ 24,209	$ 37,485
At beginning of year	275,619	238,134
At End of Year (Note 2)	$ 299,828	$ 275,619

See notes to financial statements

CALIFORNIA MEDICAL ASSOCIATION

Statement of Expenditures for the Years Ended June 30, 1962 and 1961

EXHIBIT B—SCHEDULE 1

	YEAR ENDED JUNE 30	
ADMINISTRATION	1962	1961
Salaries (see Note 1):		
Executive	$ 38,177	$ 42,508
Clerical	60,218	58,586
Total	$ 98,395	$101,094
Office:		
Rent	$ 17,016	$ 19,492
Equipment purchases and maintenance	6,939	11,511
Supplies	21,038	16,962
Telephone and telegraph	12,414	11,120
Postage	1,778	2,934
Professional fees (other than legal)	2,608	4,004
Los Angeles (other than salaries)	4,498	4,852
Sundry	2,663	2,167
Total	$ 68,954	$ 73,042
Less services charged to other accounts (including billings to others of $11,073 and $8,320)	36,275	25,766
Net	$ 32,679	$ 47,276
Legal	$ 34,620	$ 36,322
Meetings:		
Annual session	$ 48,178	$ 47,636
American Medical Association	31,822	44,345
Student American Medical Association	6,552	4,373
Council	9,588	7,296
Medical society executives	10,356	7,591
County officers' conference	21,454	17,597
Other	49	795
Total	$127,999	$129,633
Less annual session exhibitors and postgraduate fees (see Note 2)	36,730	36,180
Net	$ 91,269	$ 93,453
Travel:		
Council	$ 23,259	$ 23,464
Officers	29,520	17,140
Administrative	10,543	4,990
Total	$ 63,322	$ 45,594
Group Insurance and Retirement Program:		
Retirement Program—Current service	$ 17,912	$ 7,340
Group Life Insurance	7,779	3,081
California Physicians' Service	12,072	8,746
Total	$ 37,763	$ 19,167
Other:		
The Woman's Auxiliary	$ 9,518	$ 5,854
Payroll taxes	13,119	9,349
Personal property taxes	1,518	1,435
Dues and subscriptions	4,627	4,753
Insurance	3,887	5,337
Placement	16,857	13,363
Interest	2,748	3,513
Sundry	594	480
Total	$ 52,868	$ 44,084
TOTAL	$410,916	$386,990

NOTE 1: The total payroll for the years ended June 30, 1962 was $389,599 and for 1961 was $342,275, of which $291,204 and $241,181, respectively, are included in other expense classifications or were charged to other organizations.

NOTE 2: There were no postgraduate fees for the 1962 annual session.

Continued on Next Page

Continued from Preceding Page

	YEAR ENDED JUNE 30	
	1962	1961
SCIENTIFIC, EDUCATIONAL, AND PUBLIC RELATIONS:		
Medical services	$ 51,627	$ 50,875
Community health services	38,581	29,623
Cancer commission	33,529	41,379
Public health and public agencies	26,751	25,827
Medical education (see note)	53,540	48,091
Professional welfare	23,049	19,732
Bureau of research and planning	76,396	50,543
Public policy and public relations	275,155	265,458
Special committees of the council	45,890	20,354
Contributions:		
American Medical Education Foundation	171,520	167,237
Physicians' Benevolence Fund, Inc.	17,735	17,344
Medical Libraries	8,720	8,819
California League for Nursing	4,000	3,000
TOTAL	$826,493	$748,282

OFFICIAL JOURNAL "CALIFORNIA MEDICINE":	1962	1961
Printing	$144,540	$152,308
Salaries	35,990	33,485
Advertising sales expense (including applicable salaries)	22,083	19,429
Rent	3,516	3,384
Telephone and telegraph	3,058	2,821
Postage and mailing	8,097	7,472
Addressograph and supplies	3,005	2,351
Illustrations	2,875	2,616
Cash discounts—Advertisers	3,137	3,616
Sundry	451	1,110
TOTAL	$226,752	$228,592

NOTE: Medical education expenses are reflected net of the following credits:

	1962	1961
Postgraduate fees	$14,285	$19,165
Special grants applied	17,390	10,128
Total	$31,675	$29,293

Notes to Financial Statements June 30, 1962

NOTE 1: The California Medical Association in addition to the Group Pension Program effective January 1, 1961 has made provision for a Past Service Pension for certain full-time employees. The unpaid balance due on the single premium of $130,257 required to fund this Past Service Pension at June 30, 1962 aggregated $44,257, for which there is a balance of $18,687 on hand from the funds remitted by the Trustees of the California Medical Association. The remaining amount of $25,570, to be paid out of future operations, has not been set up as a liability on the books of the Association at June 30, 1962 and is not reflected in the accompanying financial statements.

NOTE 2: The current membership dues shown as income represent principally dues for the full calendar year of 1962 without deferring the portion applicable to the six-month period subsequent to June 30, 1962. If such dues and related subscriptions had been prorated and the applicable income deferred to the period subsequent to June 30, 1962, the net assets at that date would have been reduced by approximately $551,500.

NOTE 3: The California Medical Association is one of the defendants in an action pending in Los Angeles brought by the Osteopathic Physicians & Surgeons of California. It is the opinion of the Association's counsel that the only expense involved in this connection will be legal and court costs which will be billed at the conclusion of the litigation.

TRUSTEES OF THE CALIFORNIA MEDICAL ASSOCIATION

(A Nonprofit Corporation)

Statement of Net Assets June 30, 1962

EXHIBIT A

ASSETS:		
Cash		$ 18,549
United States Treasury bonds, at maturity value (market value $987,615) (Note 4)		1,121,000
United States Treasury bills, at cost (market value, $44,955)		44,689
Contract receivable		25,000
Account receivable and accrued interest		4,931
Investments, at cost:		
Pacific Magnetic Tape Equipment Co. (Note 1)	$ 9,000	
Six Ninety Three Sutter Publications, Inc.	1,000	10,000
Property, at cost (subject to mortgage):		
Land	$ 87,400	
Building and improvements	295,938	
Total	$383,338	
Less accumulated depreciation	29,545	
Net depreciated value		353,793
Equipment, at nominal value		1
Cash surrender value of life insurance policy		16,522
Balance receivable under a death settlement plan		1,274
Prepaid insurance		281
Prepaid real estate taxes (contra)		9,400
TOTAL ASSETS		$1,605,440
LIABILITIES:		
Note payable		$ 220,000
Mortgage payable		84,231
Accounts payable, including accrued interest		3,148
Accrued real estate taxes (contra)		9,400
Trust funds		72,961
TOTAL LIABILITIES		$ 389,740
NET ASSETS		$1,215,700
SOURCE OF NET ASSETS:		
Contributed	$883,193	
Excess of income over expenditures (Exhibit B)	332,507	
TOTAL		$1,215,700

See notes to financial statements

Notes to Financial Statements June 30, 1962

NOTE 1: The Trustees of the California Medical Association, as a nonprofit corporation, owns all of the outstanding stock of the Pacific Magnetic Tape Equipment Co., which was formed for the purpose of merchandising magnetic tape equipment as an adjunct to the activities of the Audio-Digest Foundation, a wholly owned subsidiary of the California Medical Association. An unaudited financial statement of the Pacific Magnetic Tape Equipment Co., as of June 30, 1962, reflects a net worth of $17,224 at that date. We are informed that the Pacific Magnetic Tape Equipment Co. is now in the process of dissolution and liquidation of its assets.

NOTE 2: The portion of the Trust Funds applicable to the retirement or similar benefit to Mr. and Mrs. Ben H. Read, amounting to $42,000 at June 30, 1962, has not been segregated from other assets of the corporation as directed by Chapter XVII of the bylaws of the corporation which states: ". . . All assets of this fund shall be held separate and apart from all other assets and property of the corporation . . ."

NOTE 3: The Trustees of the California Medical Association is guarantor to the Crocker-Anglo National Bank for loans to a maximum amount of $40,000 for the California Commission for Accreditation of Nursing Homes and Related Facilities. Loans outstanding under this guaranty at June 30, 1962 were reported to aggregate $30,000.

NOTE 4: The United States Treasury bonds kept in a custodian account with the Crocker-Anglo National Bank are pledged to that bank for loans when and if needed, and for loans for which the Trustees is guarantor. There were no direct loans payable at June 30, 1962.

TRUSTEES OF THE CALIFORNIA MEDICAL ASSOCIATION

(A Nonprofit Corporation)

Statement of Income and Expenditures for the Year Ended June 30, 1962

EXHIBIT B

INCOME:		
Excess of property income over expenses (Schedule 1)		$ 11,086
Other:		
Interest on United States Treasury bonds and bills	$28,291	
Interest on contract and notes, net	3,509	
Dividend (Pacific Magnetic Tape Equipment Co.)	900	
Miscellaneous	48	32,748
Total Income		$ 43,834
EXPENDITURES (other than property expense):		
Interest	$ 2,312	
Fees	1,865	
Insurance	204	
Other	7	
Total Expenditures		4,388
Remainder		$ 39,446
DEDUCT:		
Net premiums on life and retirement insurance policies	$ 4,709	
Provision for the retirement or other benefit of an employee of an affiliated organization	3,000	7,709
EXCESS OF INCOME OVER EXPENDITURES:		
Current year		$ 31,737
Total at beginning of year		300,770
Total at End of Year		$332,507

See notes to financial statements on preceding page

Statement of Property Income and Expenses for the Year Ended June 30, 1962

EXHIBIT B—SCHEDULE 1

INCOME FROM RENTALS:		
California Medical Association	$44,400	
Others	22,492	
Total		$66,892
EXPENSES:		
Utilities	$ 5,046	
Janitor service and maintenance	8,677	
Repairs—Plumbing, electric, etc.	3,574	
Alterations	3,601	
Insurance	981	
Elevator inspection and service	1,237	
Supplies	614	
Sundry	234	
Total	$23,964	
Taxes	9,158	
Interest on mortgage	3,725	
Interest on borrowed money for purchase of property and making improvements thereon	8,891	
Total before depreciation	$45,738	
Depreciation	10,068	
Total		55,806
EXCESS OF PROPERTY INCOME OVER EXPENSES		$11,086

CALIFORNIA MEDICAL EDUCATION AND RESEARCH FOUNDATION

(A Nonprofit Corporation)

Statement of Net Assets June 30, 1962

ASSETS—CASH IN BANK			$13,374
LIABILITIES AND UNEXPENDED PORTION OF GRANTS:			
Due California Medical Association		$4,730	
Unexpended portion of grants received:			
Audio-Digest Foundation	$6,250		
United States Department of Health, Education, and Welfare	1,567	7,817	
TOTAL			12,547
NET ASSETS			$ 827

See notes to financial statements

Statement of Income and Expenditures for the Period August 16, 1961 to June 30, 1962

	TOTAL	GRANT FUNDS	GENERAL FUNDS
INCOME:			
Contributions	$ 3,850		$3,850
Grants	9,925	$9,925	
TOTAL	$13,775	$9,925	$3,850
EXPENDITURES:			
Research project—California Medical Association	$ 2,500		$2,500
Salaries:			
Director of research and administrative	1,334	$1,334	
Other	157	157	
Supplies and printing	575	75	500
Mailing and postage	11		11
Telephone	25	25	
Seal and notary fee	12		12
Travel and meeting expense	434	434	
Payroll taxes and employees' benefits	83	83	
TOTAL	$ 5,131	$2,108	$3,023
UNEXPENDED PORTION OF GRANTS RECEIVED		$7,817	
EXCESS OF INCOME OVER EXPENDITURES			$ 827

See notes to financial statements

Notes to Financial Statements June 30, 1962

NOTE: The Foundation has been awarded a community health project grant by the United States Department of Health, Education, and Welfare. The sum of $14,700 has been approved for the grant period beginning June 1, 1962 and ending May 31, 1963, of which $3,675 had been received at June 30, 1962 for the first quarter. Subject to the availability of funds and the successful development of the project, the following amounts have been tentatively approved for succeeding grant periods:

Second year	$20,900
Third year	26,100

A preliminary financial statement and progress report will be required to be submitted with the application for continuation of grant which must be received by the grantor not later than February 1, 1963.

PHYSICIANS' BENEVOLENCE FUND, INC.

(A Nonprofit Corporation)

Statement of Assets June 30, 1962

EXHIBIT A

ASSETS

CASH—CROCKER-ANGLO NATIONAL BANK			$ 7,240
INVESTMENTS:			
U. S. Treasury 2½% bonds, at maturity values:			
Due December 15, 1969	$10,000		
Due December 15, 1972	34,000		
Total (market value, $38,845)		$44,000	
U. S. Treasury bills, at cost:			
Due August 2, 1962, $25,000	$24,826		
Due September 20, 1962, $20,000	19,863		
Total (market value, $44,844)		44,689	
TOTAL			88,689
NOTE RECEIVABLE BY DEED OF TRUST—LOS ANGELES COUNTY PHYSICIANS AID ASSOCIATION (due in quarterly installments of $1,000 plus interest at 2½% per annum—Original amount, $50,000)			46,000
ACCRUED INTEREST RECEIVABLE			297
TOTAL			$142,226

SOURCE OF ASSETS

CONTRIBUTED AT ORGANIZATION	$ 92,132
EXCESS OF INCOME OVER EXPENDITURES (Exhibit B)	50,094
TOTAL	$142,226

Statement of Income and Expenditures for the Year Ended June 30, 1962

EXHIBIT B

INCOME:		
Contributions received:		
California Medical Association (see note)	$17,735	
The Woman's Auxiliary of the California Medical Association	2,942	$20,677
Contribution returned by beneficiary		48
Interest earned:		
U. S. Treasury bonds and bills	$ 1,255	
Loans	1,645	2,900
TOTAL		$23,625
EXPENDITURES:		
Payments to beneficiaries:		
Payment to Los Angeles County Physicians Aid Association	$ 6,000	
Payments to other beneficiaries	8,221	
Total payments to beneficiaries	$14,221	
Other	546	
TOTAL		14,767
EXCESS OF INCOME OVER EXPENDITURES:		
Current year		$ 8,858
Total at beginning of year		41,236
TOTAL AT END OF YEAR		$50,094

NOTE: The constitution of the California Medical Association, Article IV, Section 6, was amended in May, 1956, and provides: "At least $1 out of the annual dues paid by each active member of the Association shall be allocated to the Physicians' Benevolence Fund, Inc., a corporation, and shall be used for the purposes as set forth in that corporation's Articles and Bylaws."

SIX NINETY THREE SUTTER PUBLICATIONS, INC.

Balance Sheet June 30, 1962

EXHIBIT A

ASSETS:		
Cash		$2,245
Account receivable—California Medical Association		878
Other accounts receivable		175
Inventory		2,568
Deposit and deferred organizational expense		123
TOTAL		$5,989
LIABILITIES AND STOCKHOLDER'S EQUITY:		
Liabilities:		
Note payable	$4,000	
Account payable	35	
Federal income tax payable	82	
Total liabilities		$4,117
Stockholder's equity:		
Capital stock (authorized, 2,500 shares of $10.00 par value each; issued and outstanding, 100 shares) (see note)	$1,000	
Retained earnings (Exhibit B)	872	
Total stockholder's equity		1,872
TOTAL		$5,989

NOTE: The Trustees of the California Medical Association is the sole stockholder of this Corporation.

Statement of Income and Retained Earnings for the Year Ended June 30, 1962

EXHIBIT B

REVENUE:			
Sales		$5,344	
Cost of goods sold		2,121	
GROSS PROFIT ON SALES			$3,223
EXPENSES:			
Office expense:			
Services	$1,200		
Rent	300		
Supplies	113		
Fees	375		
Other	21	$2,009	
Shipping expense:			
Services	$ 300		
Postage, freight, and express, net	226	526	
Personal property taxes		136	
State franchise and sales tax		102	
Interest		176	
TOTAL			2,949
NET INCOME BEFORE FEDERAL INCOME TAX			$ 274
FEDERAL INCOME TAX			82
NET INCOME FOR THE YEAR			$ 192
RETAINED EARNINGS:			
At beginning of the year			680
AT END OF THE YEAR			$ 872

REPORT OF THE COMMITTEE FOR

Emergency Action

To the House of Delegates:

The Committee for Emergency Action was established several years ago as a small group of responsible officers of the C.M.A. who could be called together on short notice to take actions too urgent to be held until the next Council meeting. The committee reports its actions to the Council, which has the authority to affirm, amend or deny the committee's recommendations.

This committee is called upon at various times during the year to pass on the propriety or advisability of proposals, to implement decisions made in principle by the Council or to consider situations which may arise without warning. It reports its findings to the Council and these are printed in the Council minutes.

During the past year the committee has met on various occasions and has carried out the duties placed upon it by the Council. Its members at this time are your President, President-Elect, Speaker of the House and Council Chairman.

Respectfully submitted,
OMER W. WHEELER, *Chairman*

REPORT OF

The Council

To the House of Delegates:

The Council of the California Medical Association is established as the body to carry out the instructions of the House of Delegates and to act for that body between its annual meetings. It is called upon to make policy when no established policy is in effect and when the demands of time are pressing to the point of requiring immediate action.

The Council is given several responsibilities under the Constitution and Bylaws, among them the management of a central office, the collection of dues and other funds, the payment of approved statements, the maintenance of various commissions and committees and the exercise of judgment on numerous proposals which may be made during each interim between House of Delegates sessions.

The managerial aspects of these duties are, of course, placed in the hands of the staff, who report from time to time and who carry on the daily procedures required in the operation of a large organization with a number of varied interests.

This report will be presented on the basis of the areas of interest to the entire membership which are handled by the Council itself. Inasmuch as minutes of each Council meeting are published in CALIFORNIA MEDICINE, many details which have been brought to conclusion in Council meetings will not be repeated here. However, the items here reported will attempt to present the major factors encountered by the Council in its periodic meetings.

1. *General.* The Council plans ten meetings each year, usually on a monthly basis except in the summer and year-end periods when meetings may be spaced farther apart. The record shows that each meeting attracts a complete attendance of all Council members except those few absent for urgent cause. It should also be noted that each member is active in discussions on various topics and that the policy of the chair is to allow each member ample opportunity for discussion and expression. During the 1963 Annual Session the Council will meet each day of the session and will take up any questions, proposals or other items which may develop immediately before or during the meeting. The policy of ten meetings each year will be continued in the coming year.

2. *New Members.* The Council was pleased to welcome five new members in the year now closing. These were Doctors Malcolm S. M. Watts of San Francisco, Lewis T. Bullock of Los Angeles and Dave F. Dozier of Sacramento, all elected by their districts at the 1962 Annual Session, and Doctors Joseph P. Cosentino of Sacramento and Forest J. Gruningen of Los Angeles, appointed as interim Council members following unification and formation of the Forty First Medical Society. The latter two are serving until the time of the 1963 Annual Session, when the two Council offices of the Eleventh Councilor District will be filled by election by the Delegates of their district.

3. *Meeting Guests.* The Council is pleased to invite and to hear from representatives of various other groups at its meetings. Provision is made on the agenda of each meeting to permit these guests to make such reports, suggestions and proposals as they wish.

The Department of Public Health of the State of California has been represented for many months by Doctor Malcolm Merrill, State Director of Public Health. Doctor Merrill has regularly attended Council meetings and given progress reports and up-to-date statements on public health problems. The Council has been pleased to name liaison committees to work with Doctor Merrill and his department on items of special interest.

Doctor Daniel Blain, State Director of Mental Hygiene, has kept the Council advised of progress in his department. The Council has applauded Doctor Blain's long-term plan to provide for health care for the mentally ill in their home communities under private auspices, rather than construction of additional large and costly state hospitals. Doctor Blain has regularly stressed the fact that state hospitals may easily become the dumping ground for old patients whose symptoms suggest nothing more than old age, forgetfulness, lack of housing in family surroundings and general senility. For this type of patient, as well as for younger patients who can be accommodated, Doctor Blain continues to work for provision of facilities in the home area, use of qualified nursing homes and use of private physicians who can cooperate with state officials in providing adequate and suitable medical care at home and in familiar surroundings.

The State Department of Social Welfare is another state agency which regularly sends its representatives to Council meetings. Doctor Lester McDonald, medical director, or Mrs. Eunice Evans, assistant director of the department, have attended Council meetings regularly and have kept the Council advised on the progress of the Old Age Assistance and the Medical Aid to the Aged programs. These relatively new programs have demanded an unusually large expenditure of time by the Council, even though a special liaison committee to the state department is regularly meeting with state officers. The liaison committee, acting through the Council, has been able to effect various changes in the programs and their regulations to make it possible for a growing number of physicians to provide the medical services for which the older citizens qualify under existing laws. Comment will be made in another section of this report on this subject.

In addition to these invitees, the Council regularly invites representatives of California Physicians' Service, the medical schools of the state, the Medical Executives Conference and the California Hospital Association to attend meetings and to bring forward all items of mutual interest and concern. Where action is indicated on any specific item, the Council is in position to delegate the matter to the appropriate committee or other body without delay.

4. *California Physicians' Service.* As noted above, representatives of California Physicians' Service regularly attend Council meetings, report on new developments and bring forth questions of policy which require discussion. C.P.S. has long served as a medical management arm of the Association and has provided the skill and personnel required to delve into experimental matters which may offer solutions to medical care problems. The officers of C.P.S., together with key personnel, sit at Council meetings and make themselves available for questions on present or potential programs. In this way a great deal of experimental work has been made possible, from much of it springing an accumulation of facts and experience which are invaluable in gauging further proposals. The Council regularly names three of its own members to sit on the Board of Trustees of C.P.S. and makes nominations for other board members whose terms are expiring. Current nominations will be placed before the coming House of Delegates.

5. *State Fees.* As noted above, problems have arisen in the Old Age and Medical Aid programs of the State Department of Social Welfare. These problems revolve principally around the level of fees allowed by the department for medical services provided for program recipients.

The State of California has for many years followed one or more schedules of fee allowances for medical services. Oldest of these is the fee schedule of the Industrial Accident Commission, first adopted about 50 years ago. A separate schedule for Crippled Children's Services has been used for many years and more recently fee allowances for the new programs under Social Welfare have come to the front. About five years ago the department set its allowable medical care fees at the level of the 1957 Relative Value Studies, using a factor of four. This same schedule was, despite its obsolescence, used under the more recent M.A.A. program. The Association has attempted to bring this schedule of allowances to a more realistic level. The state has taken note of the variety of schedules now in use and has called for stabilization of all medical fee allowances paid by the state. As a result, all present fee schedules have been frozen at the level of the 1957 studies, at factor four. The Council has appointed a committee to deal with officials of the State Department of Finance on this matter and it appears at this time as though the 1960 Relative Value Studies may be substituted for the 1957 studies. This, however, would mean a reduction of the present factor to a point which would compensate for the increase in units in the 1960 studies and bring the total cash payments to the same level as today. There remains a great amount of work to be done to secure a more adequate fee level under these programs and the Council, fully aware of the problem, is urgently doing everything possible to obtain a more adequate level of state fees.

One county, Santa Barbara County, has been given approval by state and local authorities to provide medical services under the Social Welfare programs through a pilot prepayment plan to be administered by California Physicians' Service. This experimental move may provide a means of solving the fee problem by taking the matter of establishing fees from state officials and placing it in the experienced hands of C.P.S. and its trustees.

6. *Osteopathic Unification.* During 1962 the Association completed its program of unification of the medical and osteopathic professions in California. Legislative acts were adopted early in the year, final approval was given by the C.M.A. House of Delegates and its counterpart in the California Osteopathic Association. The people of the state voted overwhelmingly in favor of the program in the general election of November. The California College of Medicine reorganized itself as a medical school and issued a number of M.D. degrees to those who formerly held D.O. degrees and were found worthy of the present status. The Forty First Medical Society was formed on the remains of the California Osteopathic Association and is today the second largest component of the California Medical Association. Its representatives will sit with the 1963 House of Delegates as representatives of the Eleventh Councilor District.

The Council approved and followed every move in the campaign to secure this unification, up to and including the financing of the public campaign preceding the November balloting. In carrying through this unification the Council is certain of its effect for good on the people of the state. There is now one unified medical profession in the state, speaking with a size and authority greater than ever before and without the internecine quarrels which have characterized some years in the past. The completion of this program in California is already being reflected nationwide. At last report there were 11 other states making moves toward the elimination of differences between the two disciplines. Some proposed plans call for little more than passive recognition while others openly plan to emulate the California pattern for complete cessation of further osteopathic licensure and unification of the present two groups into one. While these programs will require time, it appears obvious that California has started a movement which will become nationwide and reflect credit on the originating state.

Some problems of unification still remain, principally the matter of recognition for Forty First members who had secured specialty certification in their own fields of practice but have not qualified for such recognition by the several American Boards. A committee appointed by the Council is currently working on this problem.

7. *Nursing Homes.* The Council about two years ago approved a loan guarantee in the amount of $20,000 to provide working funds for the then newly-organized Joint Commission for the Accreditation of Nursing Homes and Related Facilities. At the same time, the California Hospital Association guaranteed $5,000 on the same basis. The commission was organized as a cooperative effort of the two associations and other organizations interested in the development of a sound system of qualified nursing homes to serve elderly and convalescent patients. It was anticipated at the time that state authorities providing nursing home care for eligible patients would require minimum standards for such institutions and it was believed that inspection and certification on a voluntary cooperative basis would be preferable to the imposition of state requirements. The inspection and certification process was set up on a basis of each nursing home paying a fee for the services provided, total fees estimated as sufficient to cover total cost of the commission.

Unfortunately, there has been considerable delay in the adoption of minimum standards by state authorities, coupled with the approval of substandard fees. Under these circumstances, the commission has not been requested to evaluate any appreciable number of nursing homes and its income has suffered accordingly. The medical and hospital associations have been called on again to guarantee bank loans in the same amount as the original loan. Within the next few months decisions by state departments will probably determine whether this venture is to be continued, at additional cost and loan guarantees, or is to be dropped as impractical.

8. *Keogh Law.* In 1962, after more than ten years of effort, Congress adopted the Keogh Law, which permits self-employed individuals to secure limited tax deductions for funds set aside as a retirement fund. The broad outlines

of the law as enacted have been well advertised but there remains the production of a set of regulations to apply to any individual who proposes to establish his own retirement plan and to take tax deductions as allowed. Upon the passage of the law, a large number of insurance men, banks, investment firms and others importuned physicians to place their programs with their firms, despite the absence of regulations which will spell out what is eligible or ineligible for the purposes of the law.

The Council has accepted the recommendations of the Medical Executives Conference that further study be given this subject and that a special committee of the conference be authorized to review all available material with the thought of developing a statewide set of principles and procedures which all members might follow to gain the ultimate advantage from the new law. Administration of a retirement program utilizing life insurance and/or investment funds would necessarily be handled through a trustee or administrator separate from the Association but the guidelines for any such program will require study and discussion before they are presented for official approval. The special committee of the Medical Executives Conference has been authorized to utilize the services of legal, tax and investment consultants as needed.

It should be made clear to all members that while the Keogh Law is applicable to all income earned after January 1, 1963, no tax advantages or deductions may be claimed until the filing of an income tax return covering the year 1963, or in April, 1964. Regulations and requirements of the Treasury Department will require several months for approval and issuance but the individual utilizing this tax protection has until the close of 1963 to determine his own position and may at that time date his procedures back to the first day of the year.

9. *Mass polio campaigns.* The Council appointed a special advisory committee of its members and other physicians to study and draw up guidelines for mass poliomyelitis immunization campaigns using the Sabin oral vaccine. This committee was most effective in advising various county and area groups in the necessary and advisable features of such mass campaigns. Under the plans developed and adopted, millions of California citizens have been given two or more of the three polio type vaccines and more than 99 per cent of the citizens of the state have been offered the opportunity to secure this protection. The recent release of the Type III vaccine indicates an early completion of this vast disease prevention program. Physicians and many other volunteers throughout the state have given gladly and freely of their time and talent to carry out this drive.

10. *Legislation.* The Council has been advised that a mass of legislation affecting the practice of medicine and the public health will be introduced in the 1963 session of the state Legislature. The Committee on Legislation is following this session in its usual comprehensive fashion and the Council is certain that all procedures necessary for the proper and complete representation of the Association before the Legislature will be taken. The frequency of Council meetings will make it possible for all legislative items to receive prompt consideration and decision.

11. *Budget.* A budget for the 1963-1964 fiscal year has been approved by the Council and will be offered to the House of Delegates. In brief, the budget continues to provide for activities already approved and to furnish operating funds deemed essential in a growing organization. The level of dues for 1964 is set under this budget at the same level as 1963, or $75 per active member. In addition, the proposed budget makes provision for the first time for a recapture of funds which over a period of years have been expended beyond the original annual budget and have created a situation where annual bank borrowings have become necessary. A prime example is the cost of campaign funds in support of Proposition 22, an item which could not be estimated or budgeted a year ago. Since these costs depleted cash funds and required bank loans, it seems justified that they be recovered over a period of several years. The budget as proposed will make provision for a partial recovery of such expenses within a period of approximately five years and will decrease the need for bank borrowings at the end of each calendar year. The budget will also contemplate a small operating surplus at the end of the fiscal year.

12. *Resolutions of the 1962 House of Delegates.* The 1962 House of Delegates referred several proposed resolutions to the Council for study and implementation if the subject matter was considered advisable and possible of accomplishment. Other resolutions were considered by the Council and referred to appropriate commissions or committees. Reports on some of these latter items has already been made in published reports and undoubtedly the various reports to come before the 1963 House of Delegates will carry further reports.

Among the resolutions referred to the Council, the following are listed chronologically, along with actions taken on them:

No. 1—Referred to the Council along with Resolutions Nos. 5, 19, 45 and 62. All related to the creation of laws or regulations to permit physicians to set aside a portion of their income, tax deductible, for creation of a retirement fund. Methods proposed included both passage of legislation of the Keogh type and of a type to permit establishment of "professional corporations" which could serve as agencies for setting up retirement programs.

Since referral of this legislation, the Keogh proposals have been adopted by Congress, signed by the president and made part of the law. The Council has accepted proposals that the Medical Executives Conference make a study of this subject and produce a program which may be made statewide.

The subject of a "professional corporations" law has been discussed with the State Bar of California, which has voted to propose a model act as a part of the Corporations Code and to suggest amendments to the Business and Professions Code. It is anticipated that the State Bar will proceed on this matter.

No. 6—To secure legislation to permit setting aside of retirement funds. No action has been taken on this pending clarification of ultimate terms of the Keogh Act.

No. 10—Relative to public information campaigns statewide on the value of fluoridation of potable water supplies. The Council referred this to the Committee on Other Professions, which reported that the subject was of primary interest to the dental profession but that the C.M.A. should stand ready to cooperate with dentistry. The proposal of fluoridation drives in all areas at one time presents such a vast array of local situations and legal requirements that it is not considered feasible to pursue this suggestion.

No. 16—Relative to determination of the components of an adequate health care program and advice to the citizens on such details. (See also Resolution No. 47.) The Council has received from the Bureau of Research & Planning a study on the components of an adequate health care program and has furnished copies of this study to each component society for such implementation as may be accomplished at local level. The study has also been referred to the Commission on Medical Services, which maintains contact with the health insurance underwriters, with a request for suggestions for implementing the findings of this study on a statewide basis.

No. 26—Relative to proposed creation of an overall state medical disciplinary board. The Council has, in conformity with one of the resolved sections, referred this proposal to the Committee on Legislation, which has the proposal under study during the early days of the 1963 legislative session.

No. 29—Referred to the Council and the Speaker of the House, proposing the establishment of a committee on finance in the House as a year-around committee with authority to seek consultation with auditors, have access to C.M.A. books and in other ways keep its members in constant touch with all financial affairs. The Council, the Speaker concurring, found this proposal not practical and, in effect, setting up a committee with authority to override the responsibilities of the Council as shown in the Bylaws. To accomplish the purposes of the resolution, however, the Council has instructed its own Finance Committee to make such inspections of the books as deemed advisable and the speaker has agreed that the committee on finance of the House be appointed at a date sufficiently early to permit this committee to make such review as it wished and to familiarize itself with the proposed budget.

No. 30—Proposing C.M.A. support for changes in abortion laws designed for the protection of the health of the mother, as well as her life, to be initiated by legislation. (See also Resolutions Nos. 17 and 37). The Council has referred this to the Committee on Legislation and a member of the Council has appeared as a witness before an interim legislative committee, to express the decision of the House on this subject. Legislation of this type may well come before the 1963 Legislature.

No. 32—Relative to foreign medical school graduates. The Council has asked the Committee on Legislation to confer with the State Board of Medical Examiners on this subject. It has also voted to name a liaison committee to meet with this board and has invited the board to send a representative regularly to Council meetings.

No. 36—Extension of present two-year nurse training act. Council has authorized support of legislation to effect the extension.

No. 38—Legislation is being sponsored to provide immunity from civil suit for physicians drawing blood for alcohol determination at the request of peace officers.

No. 46—Legislation is being sponsored to provide for exclusion from admissible evidence of medical audits, tissue committee reports, hospital staff minutes and disciplinary proceedings.

No. 60—Relative to tax exemption for non-profit medical libraries. The Committee on Legislation has received authority from the Council to sponsor legislation to provide such tax exemption.

No. 61—Proposing committee to meet with State Bar to seek changes in the laws covering coroners. Such a committee was appointed but was not able to secure the cooperation of the State Bar on this subject. The committee should now be disbanded or other approaches explored. The Council is aware that this has been a volatile subject for many years and a tremendous mass of legislation would be needed to accomplish the intent of the resolution.

No. 64—Proposing that the C.M.A. meet with representatives of the state Legislature to provide legal means for control of the quality of medical care in the state and to provide indemnification for the purchase of health insurance by needy persons. The Council has referred this resolution to the Committee on Legislation and has approved the action taken in Santa Barbara County whereby medical care under present welfare programs is to be financed through a prepayment plan operated by California Physicians' Service.

No. 78—Proposing coordinated programs for poliomyelitis immunization for all citizens. The Council appointed a supervisory committee for this purpose and immunization campaigns in various areas of the state have resulted in the giving of oral vaccine to more than 10,000,000 Californians. The State Department of Public Health estimates that more than 99 per cent of the population has been given this chance for polio immunization.

No. 79—Proposing creation of a committee on the medical aspects of sports. Such a committee has been authorized and named.

No. 89—Proposing legislation to provide privilege in matters of communication between physician and patient in matters pertaining to diagnosis, therapy and patient care. This has been referred to the Committee on Legislation. Legislation to protect society members in actions taken by society committees has already been achieved.

No. 90—To reaffirm policy that tax-supported medical care plans be tailored to meet community needs. The Council and its Liaison Committee to the State Department of Social Welfare have impressed this policy on the Social Welfare Board, which has assented to this policy in principle and has approved a plan in one county which may serve as a pilot under C.P.S. direction.

Conclusion. The Council cannot properly complete its report without paying tribute and giving thanks to the many members of the Association who so willingly and cheerfully devote their time and effort to service on the many commissions and committees in the C.M.A. structure. Without such committees and commissions, each established to bring together the special talents and interests needed for sound consideration of a particular area of interest, the Association could not operate. The Council is constantly kept advised of the many activities flowing through these official bodies and presented for official sanction.

Special thanks must also go to the officers of the Association, who have unselfishly and with great effect made their time available for whatever task demanded our efforts. The president and president-elect have been outstanding in their devotion to duty and the same may well be applied to all other elected and appointed officers. Our thanks must also go in great measure to our staff of devoted and sincere employees. These men and women carry on our daily work with a maximum of efficiency and a minimum of friction. We are fortunate to have assembled a staff of the size and ability of those who serve us throughout the year.

Respectfully submitted,
Carl E. Anderson, *Chairman*

Best Temperature for Digestion Is 122° F.

The best stomach temperature for digesting food is considerably higher than the normal body temperature, according to a study reported in the *Journal of the American Medical Association.*

"There has long been a controversy as to whether hot or cold foods are more easily digested," the article said, "It would seem logical that maximal digestion take place at body temperature. However, recent evidence tends to indicate that this is not true."

A rapid increase in digestion was found to occur at 96 to 100 degrees Fahrenheit, a group of University of Minnesota researchers headed by Dr. Owen H. Wangensteen reported. Digestion was constant between 96 and 132 degrees, he said, and maximum digestion occurred at 122 degrees.

Normal body temperature is 98 degrees.

The findings were based on the digestive action of gastric juice of human volunteers observed in test tubes under various temperatures, the report said.

The lowest temperature at which digestion takes place in a two-hour period in both man and animals appears to be around 86 degrees, the study indicated. Experiments with animals also indicated that the magnitude of change in stomach wall temperature achieved by feeding cold foods was greater than that achieved by feeding hot foods.

In dogs, it was found that the feeding of ice cream could lower stomach wall temperatures considerably below 86 degrees.

On the basis of this finding, the researchers sought to determine whether the feeding of cold foods could be used to suspend digestive processes in man and in this way aid the healing of peptic ulcers.

However, in a study of seven adult volunteers, it was found that none of the patients were able to consume sufficient amounts of ice cream, sherbet, or iced milk to maintain a stomach temperature below 86 degrees for more than an hour. The researchers concluded that the method could not be considered practical.

Co-authors of the report were Drs. Edward T. Peter, Eugene F. Bernstein, Henry Sosin, Arthur J. Madsen, and Arnold I. Walder.

The article appeared in the December 1 *Journal of the American Medical Association.*

Pneumocystis Carinii IN HYPOPHARYNGEAL MATERIAL — J. W. Erchul, L. P. Williams, and P. P. Meighan. New Engl. J. Med., 267:926 (Nov. 1) 1962.

A case of *Pneumocystis* pneumonia in a 9½-month-old white male infant is described. The organism was demonstrated in hypopharyngeal material obtained before death by a method involving fixation in buffered formalin, paraffin-sectioning, and staining by the Gomori methanamine silver stain.

VIRTUALLY NO CARBONIC ANHYDRASE INHIBITION — LESS POTASSIUM LOSS

In addition to inhibition of sodium and chloride resorption, chlorothiazide and hydrochlorothiazide inhibit carbonic anhydrase. Carbonic anhydrase inhibition is implicated in increased potassium loss.

Naturetin, on the other hand, is a single-action diuretic, acting solely on tubular reabsorption; it has virtually no carbonic anhydrase activity. This single action may explain the fact that Naturetin produces less potassium loss than other benzothiadiazines and is therefore of particular value in patients prone to hypokalemia or those on digitalis.

AVAILABLE: Naturetin 5 mg. and 2.5 mg. tablets. **ALSO AVAILABLE:** Naturetin c̄ K (Squibb Bendroflumethiazide 5 mg. and 2.5 mg. capsule-shaped tablets, each with 500 mg. Potassium Chloride), for use when disease or concomitant therapy increases the risk of hypokalemia. For full information, see your Squibb Product Reference or Product Brief.

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ELIXOPHYLLIN®

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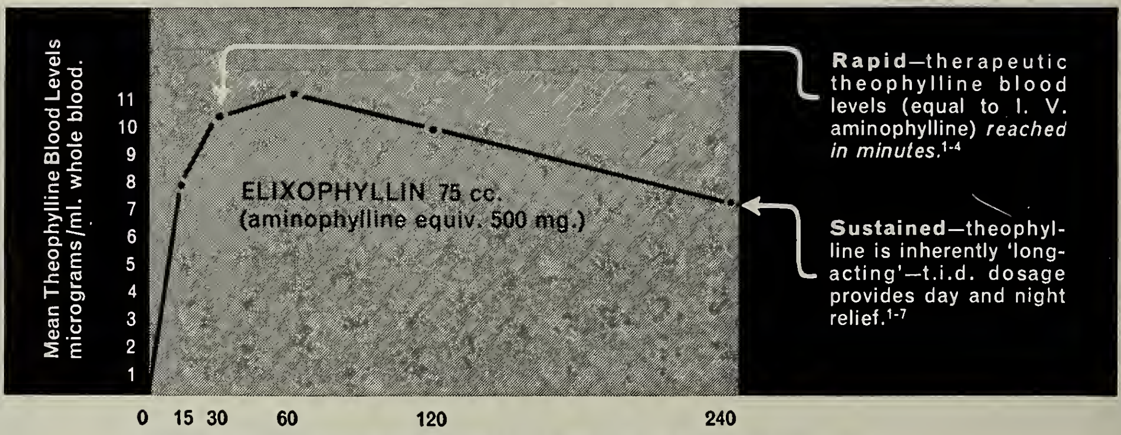
...provides relief quickly, dependably, **safely.**[1-8]

...avoids the side effects and contraindications of ephedrine polypharmaceuticals or similar sympathomimetics



Rapid—therapeutic theophylline blood levels (equal to I. V. aminophylline) *reached in minutes.*[1-4]

Sustained—theophylline is inherently 'long-acting'—t.i.d. dosage provides day and night relief.[1-7]

Minutes after administration. Mean values in adult subjects following administration of the single dose commonly used in clinical practice.[8]

Each tablespoonful (15 cc.) contains theophylline 80 mg. (equivalent to 100 mg. aminophylline) in a hydroalcoholic vehicle (alcohol 20%).

Acute Attacks: single dose of 75 cc. for adults; 0.5 cc. per lb. of body weight for children.

24 Hour Control: for adults 45 cc. doses before breakfast, at 3 P.M., and before retiring; after two days, 30 cc. doses. Children, first 6 doses 0.3 cc.—then 0.2 cc. per lb. of body weight as above.
(Gastric distress rarely encountered.)

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Sherman Laboratories
Detroit 11, Michigan

"Tired Blood" Sales Pitch Termed Outright Quackery

The "tired blood" sales pitch in its various guises was termed outright quackery in an article in the current *Today's Health* magazine, published by the American Medical Association.

Hundreds of thousands of persons are being deluded into using non-prescription compounds containing shotgun mixtures of vitamins and minerals which are heavily promoted as treatment for all sorts of anemic conditions, according to the article.

Although these mixtures do have two or three ingredients, including iron, which may possibly have some therapeutic value in cases of iron deficiency anemia, the dosage contained most often is too small to be effective therapeutically, it said.

"The chief danger of the shotgun compounds is that they pose a threat to the health, if not the very lives, of their users," the article said. "For one thing, their use many cause people . . . to *delay* seeking treatment for their ailment. For another thing, since anemia is not a disease but a symptom . . . the use of the shotgun compounds *may mask* the real disease of the patient."

The iron content of the mixture may raise a patient's blood count sufficiently to confuse the diagnosis, it was explained.

Unfortunately anemia is a complicated medical problem showing up in a wide variety of forms besides iron deficiency anemia, the article said.

In the words of Dr. William G. Mullin, Brooklyn, N. Y., quoted in the article:

"The person who turns to shotgun anti-anemic preparations is very much like the car owner who buys a carburetor and four new tires to repair the engine that is not functioning."

Nowhere else is the harm of shotgun anti-anemic therapy better demonstrated than in the anemias where primary diseases—infections, kidney disease, hypothyroidism, or leukemia or other cancers—are the chief cause, the article said.

As an example, the article cited the case of a 56-year-old salesman who began to feel rundown and took a shotgun type of iron mixture for eight months. Chronic severe pains finally drove him to a physician. An exploratory operation revealed the man to be suffering from a cancer in the small intestine. Although chances were good that the cancer could have been removed eight months earlier, it was then too late for this procedure. The patient died in the hospital.

Recently the Bureau of Medicine of the Food and Drug Administration (FDA) announced that it was in the process of re-evaluating the situation with respect to over-the-counter iron preparations, the article said.

(Continued on Page 53)

MORE URINE

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Naturetin has greater diuretic action[1-3] than either chlorothiazide or hydrochlorothiazide. A trial with Naturetin demonstrates the increased urine volume and the greater weight loss it provides.

Moreover, the diuretic effect of Naturetin is controlled, sustained and gradual, a sharp contrast to the distressingly abrupt initial diuresis characteristic of shorter acting diuretics. Naturetin maintains a favorable urinary sodium-potassium excretion ratio.[2]

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One such question which is becoming more and more common is: "My mother (and/or dad) needs the companionship of people her own age. She can't live with us. She shouldn't live alone. What can I do?"

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R E Dwyer

R. E. Dwyer
Director of Operations

Stroke Conference Meets In Chicago This Month

More than 100 experts in the fields of stroke rehabilitation, management and prevention will attend a stroke conference, February 14-16, 1963, in Chicago.

Purpose of the meeting is to develop source material and make policy recommendations for the First National Congress on Strokes, scheduled for either autumn, 1963, or spring, 1964.

The conference will be sponsored by the American Medical Association, American Heart Association, the heart disease control program of the U. S. Public Health Service, and the Office of Vocational Rehabilitation of the Department of Health, Education and Welfare.

Conference participants will represent more than 30 different fields involved in stroke cases. They will consider the problems of medical rehabilitation, social, educational and occupational rehabilitation, medical and surgical care, prevention of strokes, stroke research, community service, and professional education.

Dr. Frank H. Krusen, Minneapolis, is chairman of the conference. Dr. Theodore G. Klumpp, New York City, is vice-chairman and Dr. Ralph De Forest, Chicago, is executive secretary.

Store Canned Foods in a Cool Place

All canned foods should be stored in a cool place, according to Philip L. White, Sc.D., secretary of the Council of Foods and Nutrition of the American Medical Association.

Storage of canned foods at relatively high temperatures causes a slow deterioration of certain vitamins, he said in the January *Today's Health* magazine, published by the A.M.A.

"The net loss of nutrients depends upon the food and the vitamin; some vitamins are more stable than others," he said.

"Tired Blood" Sales Pitch Termed Outright Quackery

(Continued from Page 51)

According to Wallace F. Janssen, an FDA spokesman, laymen are "in no position to diagnose the presence of anemia, much less determine whether it is an iron-deficiency anemia, pernicious anemia, or folic acid deficiency."

"All of this," he said, "suggests that high-potency iron preparations possibly should be available for use only under a doctor's prescription if they are to be effectively used for treating iron-deficiency anemia."

Author of the article is Jack Kaplan.

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1. Cohen, B. M.: M. Times 88:855 (July) 1960. 2. Cohen, B. M.: Méd. et Hyg. (Genève) #494, p. 210 (Mar. 15) 1961.

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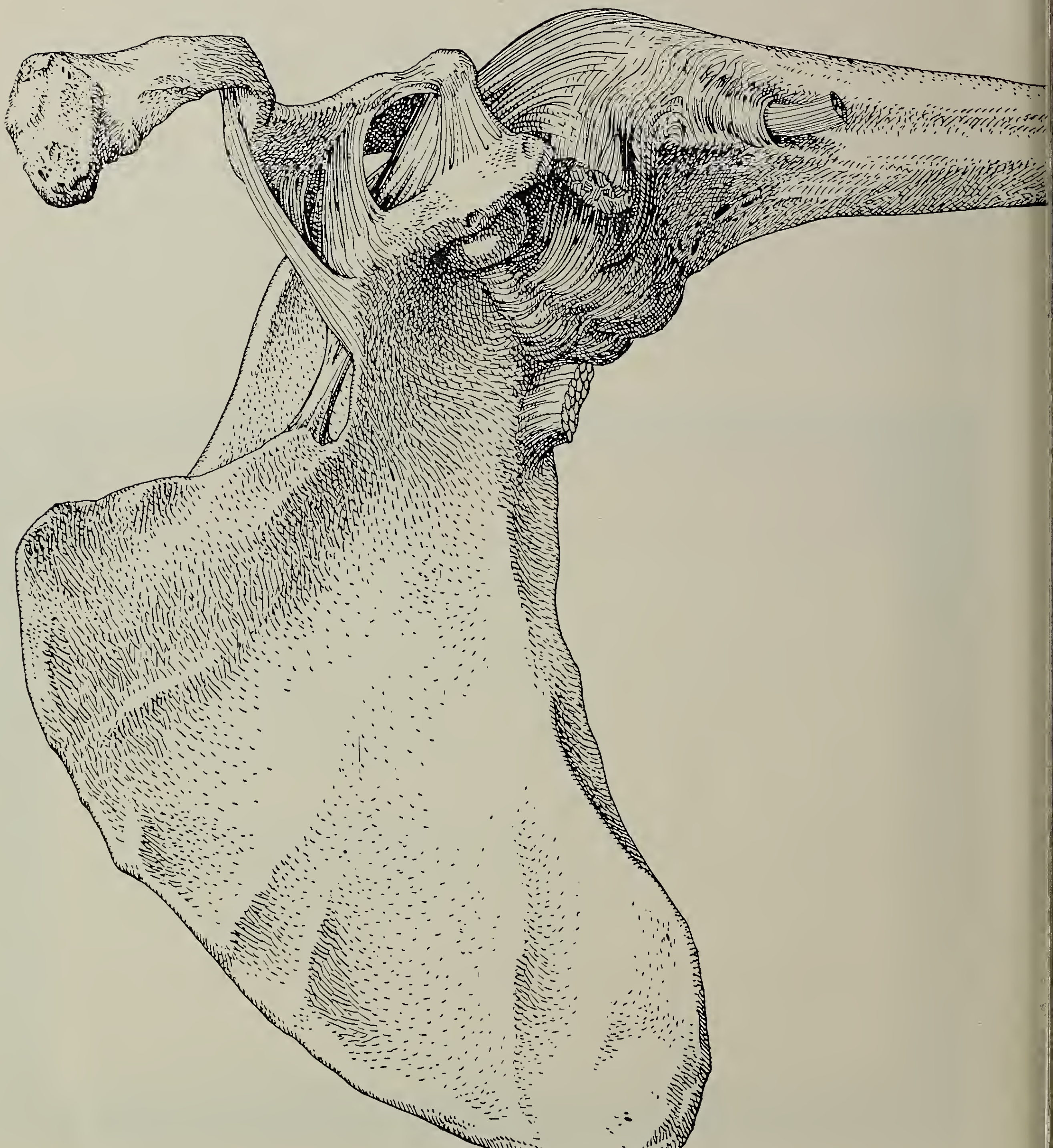

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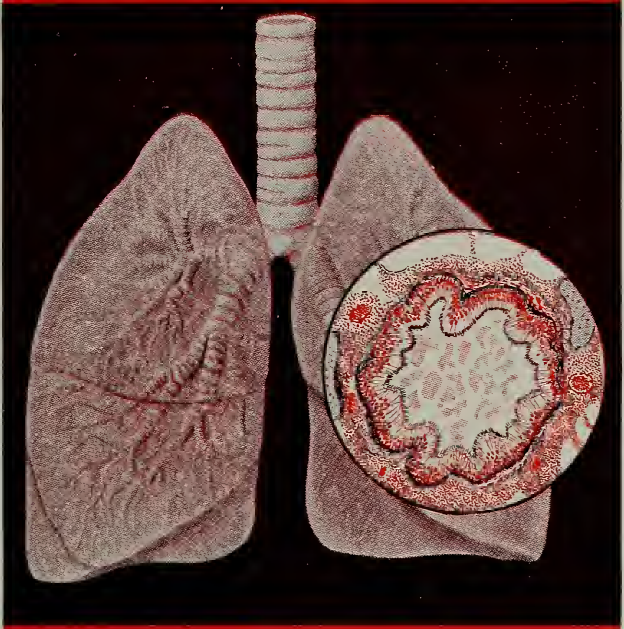
acute respiratory inflammation



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controls inflammation, curtails swelling, relieves pain

1. Taub, S. J.: Clin. Med. 7:2575, 1960. 2. Clinical Reports to the Medical Department, Armour Pharmaceutical Company, 1960. 3. Billow, B. W., *et al.*: Southwestern Med. *41*:286, 1960. 4. Physicians' Reports to the Medical Department, Armour Pharmaceutical Company, 1961.

CHYMORAL is an ORAL anti-inflammatory enzyme tablet specifically formulated for intestinal absorption. Each tablet provides enzymatic activity, equivalent to 50,000 Armour Units, supplied by a purified concentrate which has specific trypsin and chymotrypsin activity in a ratio of approximately six to one. ACTION: Reduces inflammation of all types; reduces and prevents edema except that of cardiac or renal origin; hastens absorption of blood and lymph extravasates; helps to liquefy thick tenacious mucous secretions; improves regional circulation; promotes healing; reduces pain. INDICATIONS: Chymoral is indicated in respiratory conditions such as asthma, bronchitis, rhinitis, sinusitis; in accidental trauma to speed absorption of hematoma, bruises, and contusions; in inflammatory dermatoses to ameliorate acute inflammation in conjunction with standard therapies; in gynecologic conditions such as pelvic inflammatory disease and mastitis; in obstetrics as episiotomies and breast engorgement; in surgical procedures as biopsies, hernia repairs, hemorrhoidectomies, mammectomies, phlebitis and thrombophlebitis; in genitourinary disorders as epididymitis, orchitis and prostatitis; in dental and oral surgery as fractures of the mandible or maxilla, difficult or multiple extractions, and alveolectomies. CONTRAINDICATIONS: None known. INCOMPATIBILITIES: None known. Antibiotics as well as generally accepted measures may be coadministered. SIDE EFFECTS: Mild gastric upsets, rarely encountered. DOSAGE: Recommended initial dose is two tablets q.i.d.; one tablet q.i.d. for maintenance. SUPPLIED: Bottles of 48 and 250 tablets. Issue: Rev. Jan., 1963

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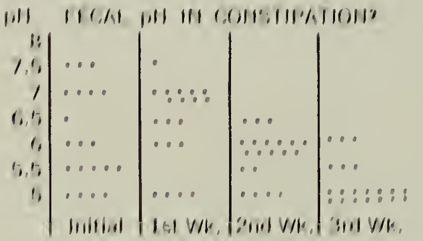

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"Stools become soft in all patients. . . ."[3] MALTSUPEX is a dependable preparation,[4] safe for infants,[5] effective in oldsters[1]—safe and effective in all constipation.

Dosage, Description and Supply: Adults—2 tablespoonfuls twice a day, reduced as indicated. Infants—¼ to ½ adult dosage. MALTSUPEX is a nutritive food concentrate derived from the natural enzymatic digestion of barley. It is available as liquid or quick dissolving powder in 8 and 16 ounce jars.

References: 1. [illegible], J. H., and [illegible], L. B.: Amer. J. Gastroent. 37:24-40 (January) 1962. 2. Galloway, H. G.: Paper to be published. 3. [illegible], H. I.: J. Amer. Dental Soc. 4:1021-1030 (October) 1956. 4. Brown, L. W.: Pediat. Clin. N. Amer. 8:161-165 (February) 1961. 5. Pritchard, J. L.: Pediat. Clin. N. Amer. 2:527-538 (May) 1955.

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REFERENCES AND REVIEWS

NEUROLOGIC COMPLICATIONS OF POLYCYTHEMIA—A. Silverstein, H. Gilbert and L. R. Wasserman: Ann. Intern. Med., 57:909 (Dec.) 1962.

This paper reports on the neurological signs and symptoms observed in 511 patients with polycythemia. Initial symptoms included headaches in 41 per cent, dizziness or vertigo in 30 per cent, paresthesias of the extremities in 13 per cent, visual complaints in 11 per cent and tinnitus in 3 per cent. Headache was the chief complaint of 37 patients. Probable cerebrovascular accidents occurred in 48 patients; in 17 of these the cerebral episode preceded knowledge of polycythemia. One or more "transient ischemic attacks" were described by 11 patients. Papilledema was noted in 3 patients. The postmortem findings included encephalomalacia, subdural and intracerebral hematomas, and cryptococcosis of the nervous system. The nature and pathogenesis of cerebrovascular disease, the etiology of papilledema and other neurological complications of polycythemia are discussed.

* * *

A METHOD FOR PLACING A TOTAL HOMOLOGOUS AORTIC VALVE IN THE SUBCORONARY POSITION—A. J. Gunning and C. G. Duran. Lancet, 2:488 (Sept. 8) 1962.

It has been shown that homologous aortic valves perform satisfactorily for many years (6½) when transplanted to the descending aorta. As the question of aortic valve prostheses for diseased aortic valves is still unsolved, it was thought reasonable to transplant an homologous aortic valve into the subcoronary position. A technique for doing this is described.

* * *

OXIDATION REDUCTION IN HEART MUSCLE: THEORETICAL AND CLINICAL CONSIDERATIONS—S. Gudbjarnason, R. O. Hayden, V. E. Wendt, T. B. Stock, and R. J. Bing. Circulation, 26:937 (Nov.) 1962.

The state of cellular oxidation in heart muscle was calculated from comparisons of the oxidation-reduction potential (pyruvate/lactate) in arterial and coronary vein blood. These methods were applied to the homografted heart and to the hearts of patients with coronary heart disease with and without congestive heart failure.

* * *

SUPRAVALVULAR AORTIC STENOSIS IN ASSOCIATION WITH MENTAL RETARDATION AND A CERTAIN FACIAL APPEARANCE—A. J. Beuren, J. Apitz and D. Harmjanz. Circulation, 26:1235 (Dec.) 1962.

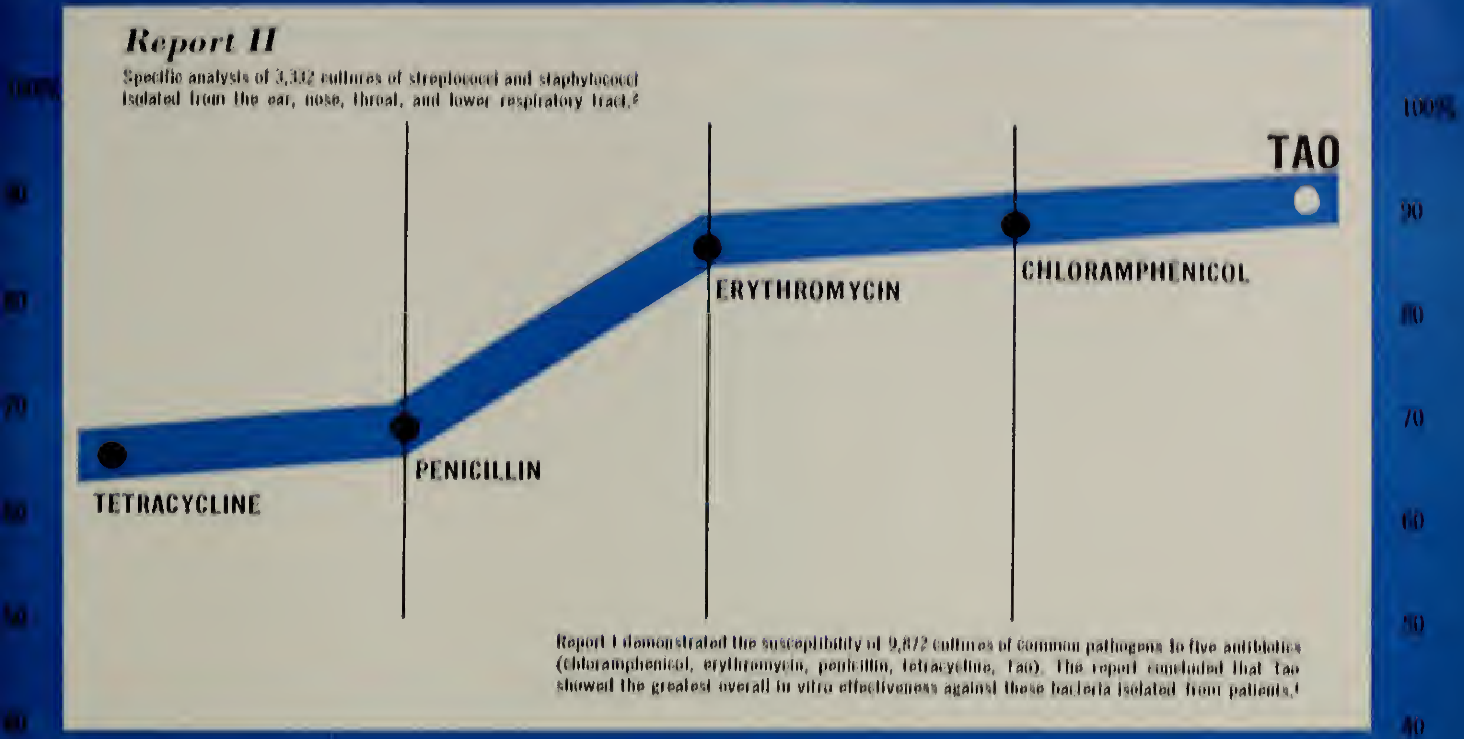
Differentiation of valvular, subaortic, or supravalvular aortic stenosis is of importance. Recently Williams (*Circulation*, 24:1311, 1961) described 4 patients with supravalvular aortic stenosis who had the same peculiar facial appearance. The present authors have also seen 4 patients with the same type of aortic stenosis and the same facial appearance. A clinical syndrome is suggested. This offers a clue to simple clinical differential diagnosis.

* * *

REPORT OF THREE YEAR STUDY OF RED CELL MOBILITY AND THE SLOWING FACTOR IN SERUM OF PERSONS WITH LYMPHOMA—A. Rottino and J. W. Angers. Blood, 20:750 (Dec.) 1962.

By the microelectrophoretic technique 2 factors were demonstrated in the serum of persons with disease. One,

(Continued on Page 74)



Report II

Specific analysis of 3,332 cultures of streptococci and staphylococci isolated from the ear, nose, throat, and lower respiratory tract.[2]

Report I demonstrated the susceptibility of 9,872 cultures of common pathogens to five antibiotics (chloramphenicol, erythromycin, penicillin, tetracycline, tao). The report concluded that tao showed the greatest overall in vitro effectiveness against these bacteria isolated from patients.[1]

Report II

Results of Bacterial Susceptibility in 3,332 Respiratory Pathogens

References

1. "Bacterial Susceptibility Patterns: A Geographic Survey." Fowler, J. Ralph, M.D., and Watters, John L., M.D. Scientific Exhibit presented at the Annual Meeting of the American Society of Clinical Pathologists, Chicago, Ill., August 31 to September 9, 1962. 2. Fowler, J. Ralph, Watters, John L. and Levy, Arthur M.: Bacterial Susceptibility Patterns as Related to Geographic Variation and Anatomical Source. In press. 3. English, A. R., and Fink, F. C.: Antibiot. & Chemother. 8:420 (Aug.) 1958. 4. English, A. R., and Fink, F. C.: Antibiot. and Chemother. 11:648 (Oct.) 1961.

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Advice Issued on Long-Term Use Of Cortisone-Like Drugs

Certain precautions in the use of cortisone and related drugs are advisable, according to four University of Michigan researchers.

The advice was contained in an article by Drs. Conrad L. Giles, Gordon L. Mason, Ivan F. Duff, and James A. McLean, Ann Arbor, Mich., published in the November 17 *Journal of the American Medical Association.*

Their conclusion was based on a study confirming earlier reports of an association between the long-term use of such drugs and the development of cataracts. A cataract is an area of cloudiness of the lens of the eye. Cataracts vary in size from dot-like areas to involvement of the entire lens.

The Michigan group reported that out of 38 patients with rheumatoid arthritis who had taken moderate and high dosages of corticosteroids for over a year, lens changes had occurred in 14. The lens changes were described as "discrete, posterior subcapsular cataracts," small areas of opacity producing minor symptoms and little reduction in ability to see. Most patients with these cataracts continue to have normal 20/20 or better vision, the researchers said.

No similar lens changes were found in a group of 24 comparable arthritics who had never received corticosteroids, they said.

In addition, the group reported that out of 12 persons with chronic bronchial asthma, two who had taken corticosteroids in moderate dosage for more than four years were found to have the same type of cataracts.

The amount and duration of drug administration appears to be the major determining factor in the production of the lens changes, the researchers said.

"Every effort should be employed to keep chronic systemic corticosteroid administration at minimal-dosage levels," they concluded.

Corticosteroid is the name given to the drugs modeled after the hormones produced by the adrenal cortex, the outer part of the adrenal gland, such as cortisone and hydrocortisone and their derivatives, including prednisone.

SKIN TEMPERATURE AFTER EATING—A. J. Stunkard, W. L. Clovis, and S. M. Free. Amer. J. Med. Sci., 244:622 (Nov.) 1962.

Nineteen subjects ingested a meal containing 120 gm. protein after skin temperature adaptation to an ambient temperature of 21° C. (69.8° F.). There was wide variability in skin temperature responses, but a rise of 1.5° C. in the skin temperature of the thumb occurred within 30 minutes ($p<0.025$). There was no significant change in skin temperature at any of five other sites, nor any difference in responses of the six obese and 13 nonobese subjects.

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To suppress asymptomatic bacteriuria, antibacterial agents "that do not create appreciable problems of emergence of resistant strains are of value, such as nitrofurantoin..."[5]

1. Fetter, T. R.: Med. Clin. N. Amer. *43*:1611, 1959. 2. Sanford, J. P.: J.A.M.A. *169*:1711, 1959. 3. Martin, W. J.: Journal Lancet *81*:345, 1961. 4. Mou, T. W.; Siroty, R., and Ventry, P.: J. Amer. Geriat. Soc. *10*:170, 1962. 5. Kaitz, A. L., and Williams, E. J.: New Engl. J. Med. *262*:425, 1960.

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Diet in *Harper's Bazaar* Disputed in A.M.A. *Journal*

A weight-reducing method employing calorie restriction and hormone injections was disputed in the December 15 *Journal of the American Medical Association.*

The slimming method was described by Dr. A. T. W. Simeons of Rome, Italy, in an article in the October *Harper's Bazaar.* Dr. Simeons' program consists of daily injections of human chorionic gonadotropin, a hormone produced by the outer covering of the fertilized ovum, in conjunction with a 500-calorie diet.

The method was disputed by Dr. William J. McGanity of the University of Texas Medical Branch, Galveston, and in the following Editor's Note, published in answer to a question submitted to the *Journal:*

"The Department of Drugs of the American Medical Association finds no scientific evidence from controlled experiments to justify the use of human chorionic gonadotropin in the treatment of obesity. A recent double blind study . . . discloses no significant difference in the effects of human chorionic gonadotropin and saline [salt] injections on weight reduction."

Dr. McGanity said a 500-calorie diet represents a calorie restriction of 1,000 to 1,500 calories a day in the adult male or non-pregnant woman.

On such a "starvation" diet, he said, weight loss should be observed. However, he said, "continued adherence to such a drastic regimen is potentially more hazardous to the patient's health than continued obesity."

Dr. McGanity also said there is no scientific support for Dr. Simeons' contention that either during pregnancy or following use of the hormone in the nonpregnant state, a person's blood is always saturated with food regardless of how little he or she may eat.

Obesity or excessive weight gain during pregnancy represents a real hazard for the mother and child, Dr. McGanity said, and pregnancy presents a good opportunity to begin to reduce because motivation may be increased.

However, he said, weight reduction during pregnancy should not exceed 10 per cent of the woman's weight before pregnancy; otherwise, complications in the mother and child are increased.

For others, he said, there are in general two means of weight reduction—reducing caloric intake while maintaining the usual level of activity or increasing activity while maintaining the same level of caloric intake.

In spite of claims to the contrary, Dr. McGanity said, calories do count.

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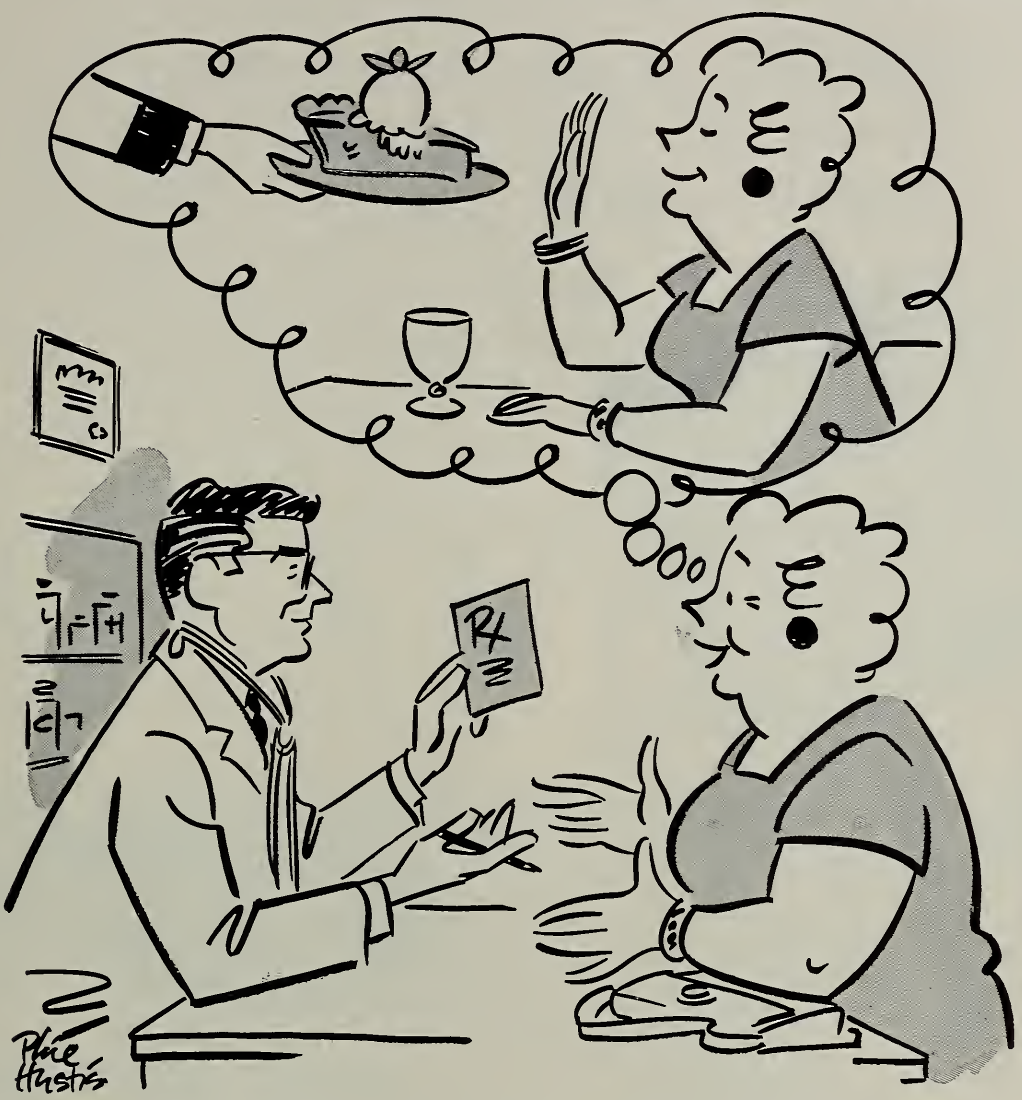

Controls food craving, keeps the reducer happy — In obesity, "our drug of choice has been methedrine . . . because it produces the same central effect with about one-half the dose required with plain amphetamine, because the effect is more prolonged, and because undesirable peripheral effects are significantly minimized or entirely absent." Douglas, H. S.: West.J.Surg. 59:238 (May) 1951.

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Bed Rest Beneficial In Some Heart Cases

Prolonged bed rest has been used successfully to treat a certain type of heart condition which is usually fatal, medical researchers reported.

Thirty-six patients with enlarged hearts due to heart disease of unknown cause were kept on bed rest for periods of 1 to 16 months, Drs. George E. Burch, John J. Walsh and William C. Black, New Orleans, wrote in the January 12 *Journal of the American Medical Association.* Previous therapy, including drugs, was continued although the patients had shown little or no improvement, they said.

The overall response to therapy was good, the researchers reported. A "cardiac disease which is essentially 100 per cent fatal is apparently cured in more than 50 per cent of the patients," they said.

In 11 of the 21 patients who completed the course of treatment, the heart returned to normal size, they said. Four experienced incomplete improvement with definite reduction in heart size and six failed to respond to therapy, they said.

The patients, who were cared for in a special unit of the U. S. Public Health Service Hospital, included 22 men and 16 women, the authors said. Most of the women experienced onset of the disease in their 30s and 40s whereas most of the men were affected in their 40s and 50s, they said. The syn-

(Continued on Page 24)

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Some Allay Depression By Overeating

Some people overeat to overcome depression, according to a report in the January 19 *Journal of the American Medical Association.*

Capt. Robert I. Simon, USAFMC, San Francisco, said "it is believed that certain individuals ward off and allay depressive feelings by increasing the amount and frequency of their food consumption."

To test this theory, he said, 27 overweight officers and airmen and 50 randomly selected nonobese personnel were questioned about depressive episodes within the past two years. The obese graup had been overweight for at least this period, he said. Average age for obese group was 28 and for the others, 26, he said.

It was anticipated that those who utilized overeating as a means of assuaging depression would be less likely to report apparent signs of depression, Dr. Simon said.

"Of the 50 nonobese individuals, 13 had a history of significant depression within the past two years, whereas only 1 of the 27 obese patients had had similar difficulty," he reported.

In certain life situations, he said, overeating is predominantly a defense mechanism which provides the individual with a primary and secondary gain in dealing with his personal conflicts, he said.

The primary gain is directed toward mitigating unpleasant feelings of insecurity, anxiety and depression produced by conscious and unconscious conflicts, Dr. Simon said.

As a secondary gain, he said, obesity may be used by the maladjusted patient as a defensive or offensive weapon to bring about desired changes in interpersonal relationships and the immediate environment.

"It may be utilized as a defensive agent in rejection of undesirable persons or situations, for example, to reject the sexual advances of an unloved spouse or to avoid physical exertion," he said. "In a positive manner, children may find their obesity useful in gaining the attention of solicitous parents."

Dr. Simon speculated that the succcess of stimulants prescribed in obesity might result from the mitigating effect of the drug on the patient's depressive tendency, thus obviating his need to overeat.

Bed Rest Beneficial In Some Heart Cases

(Continued from Page 10)

drome is characterized by an abrupt onset of severe congestive heart failure, they said.

The object of prolonged bed rest is to reduce the heart's work load, the researchers said.

With physical and mental rest, they said, the daily fluctuations in blood pressure and extra demand placed upon the heart of a person up and about is reduced to a minimum. Under this procedure, they said, the heart is allowed to recover by "natural mechanisms of repair."

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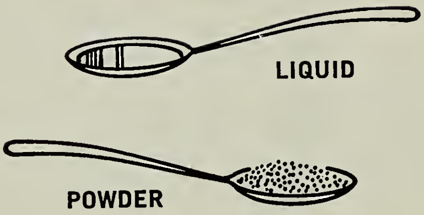

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References: 1. Raddin, J. B., and Dowell, L. B.: Amer. J. Gastroent. **37**:24-40 (January) 1962. 2. Calloway, N. O.: Article to be published. 3. Reichert, J. L.: Pediat. Clin. N. Amer. **2**:527-538 (May) 1955. 4. Hootnick, H. L.: J. Amer. Geriat. Soc. **4**:1021-1030 (October) 1956.

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A computer, programmed to act as an expert medical consultant, passed its test with flying colors.

The problem tackled by the computer was diagnosing one of three thyroid conditions, overactive, underactive, or normal, on the basis of information supplied by individual patients.

The computer came up with the same answer as the diagnosing physician in 258 of 268 cases, or 96 per cent, according to a report in the February 2 *Journal of the American Medical Association.*

"This degree of accuracy approached the level of agreement to be expected between an expert consultant and a well-qualified diagnosing physician," John E. Overall, Ph.D., Manhattan, Kan., and Clyde M. Williams, M.D., Gainesville, Fla., who conducted the study, said.

If complete data had been available on all cases, they said, there is every reason to believe that the level of agreement would have been even higher.

The use of computer programs may lead to a substantial increase in the accuracy of diagnosis especially in areas where the human capacity to remember and combine information is taxed by the need to consider large numbers of variables, the researchers said.

There is no direct means available to measure the degree of function of the thyroid gland, they explained. In making a diagnosis, they said, the physician must consider about 20 factors, including tests and symptoms, which reflect the functioning of the thyroid gland to a substantial degree.

At the same time he must also weigh the frequency of occurrence of these signs in the three conditions, they said. Since the average physician may see only 10 cases of thyroid disease a year, they said, much time is needed to acquire reliable judgment on the probability of a certain factor being associated with one of the conditions.

In the study, the computer made its decision on the basis of the relative frequencies of 21 factors in 879 patients who had been diagnosed as hyperthyroid, hypothyroid or normal, they said.

(Continued on Page 42)

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In patients with cerebrovascular disease, therapy with VASODĪLAN reduces the number of ischemic attacks.[3] "Definite improvement in attitude, eating habits, personal appearance, alertness..."[1] was observed. Improvement in the accompanying vertigo and paralysis as well as a decreased incidence of headache was also noted. VASODĪLAN is well tolerated with no troublesome side effects observed at recommended oral doses.[1-4] It is compatible with other medications such as antispasmodics,[4] hormones,[4] and insulin.[5]

Dosage and administration: Oral–10 to 20 mg. (1 to 2 tablets) t.i.d. or q.i.d.; I.M. –5 to 10 mg. b.i.d. or t.i.d. *Contraindications:* There are no known contraindications to oral administration of VASODĪLAN in recommended doses. *Cautions:* VASODĪLAN should not be given immediately postpartum or in the presence of arterial bleeding. Parenteral administration is not recommended in the presence of hypotension or tachycardia. Intravenous administration is not recommended because of the increased likelihood of side effects. *Side effects:* Few side effects occur when given in recommended oral doses. Occasional palpitation and dizziness can usually be controlled by dosage adjustment. Single intramuscular doses of 10 mg. or more may result in hypotension or tachycardia. *Supplied:* 10 mg. tablets in bottles of 100 and 1,000; in 2 cc. ampuls containing 10 mg. (5 mg./cc.) for intramuscular use, boxes of 6. For complete details on indications, dosage, administration, and clinical background of VASODĪLAN, see the brochure of this product available on request from Mead Johnson Laboratories, Evansville 21, Indiana. *References:* (1) Clarkson, I. S., and Le Pere, D. M.: Angiology *11*:190-192 (June) 1960. (2) Kaindl, F.; Samuels, S. S.; Selman, D., and Shaftel, H.: Angiology *10*:185-192 (Aug.) 1959. (3) Dhrymiotis, A. D., and Whittier, J. R.: Current Therap. Res. *4*:124-129 (April) 1962. (4) Billiottet, J., and Ferrand, J.: Semaine méd. *34*:635-637 (May 20) 1958. (5) Samuels, S. S., and Shaftel, H. E.: J. Indiana M. A. *54*:1021-1023 (July) 1961.

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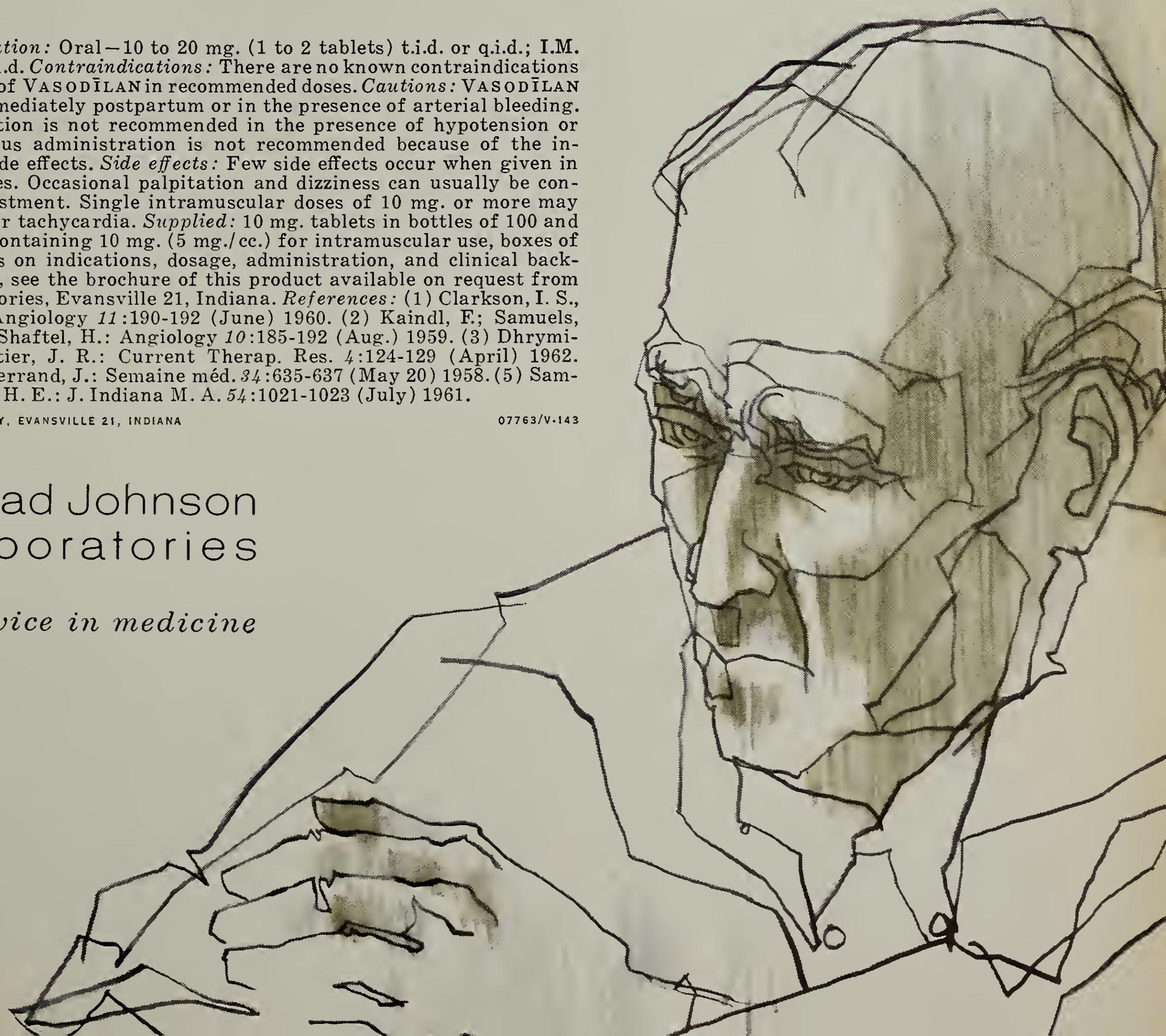

Surgery Successful In Kidney Failure

Kidney failure resulting from decreased blood circulation to that organ has been successfully treated by surgery in eight patients, three Houston surgeons reported recently.

Kidney failure due to any cause is always fatal if not corrected.

"The results of surgical treatment in these eight seriously ill patients . . . are considered highly gratifying," Drs. George C. Morris Jr., Michael E. DeBakey and Denton A. Cooley, Baylor University College of Medicine, said in the November 10 *Journal of the American Medical Association.*

"All are alive and have resumed relatively normal activities. Essentially normal renal function has been restored in all but two of the patients. . . ."

Circulation was impaired in these patients by narrowing of the main kidney artery, according to the *Journal.* Circulation was restored by establishing a bypass of the narrowed artery through use of part of another artery or an artificial artery segment, the surgeons explained.

High blood pressure was corrected or improved in all patients, they said.

The failing kidney is the most difficult complication of high blood pressure to treat and now appears to be the most common complication of this disorder, the authors said. Drug therapy and other medical management is relatively ineffective, they said.

Computer Tested As Medical Consultant

(Continued from Page 38)

By computer programming, the researchers concluded, the combined experience of the best qualified diagnosticians can be made readily available to all physicians.

Dr. Overall is affiliated with the department of psychology of Kansas State University. Dr. Williams is affiliated with the department of radiology, University of Florida College of Medicine.

The study was carried out in cooperation with the Kansas State University Computation Center.

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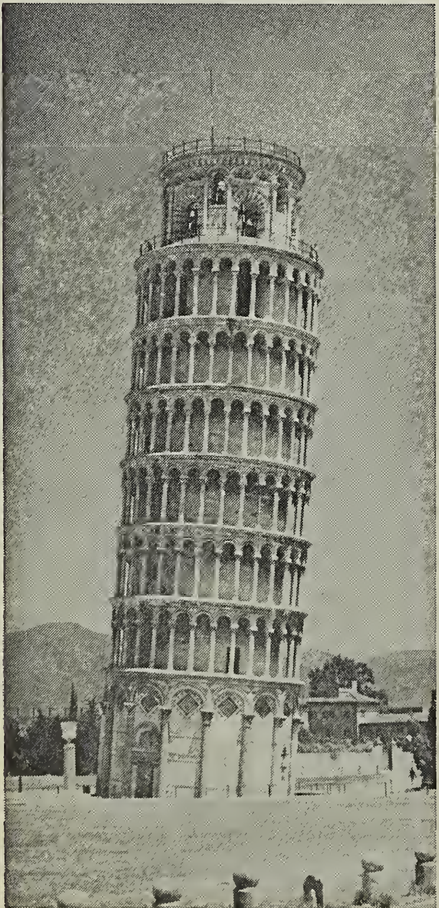

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1. *Methyltestorone-Thyroid in Treating Impotence,* A. S. Titeff, *General Practice, Vol. 25, No. 2, Feb., 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations,* L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism, August 1959.*

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Creatinine Clearance in Clinical Medicine

HOEN LAY TJAN, *M.D.*, G. JAMES TOBIAS, *M.D.*, RALPH LEVIN, *M.D.*, and JAMES HOPPER, JR., *M.D.*, San Francisco

• Clearance of endogenous creatinine offers a reliable clinical means of determining quantitative renal damage. The rate of clearance (C^{cr}) is obtained by relating the amount of creatinine filtered by the glomerulus per unit of time to the concentration of creatinine in the serum. The technic is simple and practical for routine use.

Since 1948, the creatinine clearance determination has been used extensively at the University of California Medical Center for the evaluation of renal function. The present report reviews our selected experience with this procedure during the past 14 years. Clinical examples are used to show that the C^{cr} is a more accurate index of glomerular filtration than the concentration of any of the nonprotein nitrogen components of the blood.

CLEARANCE OF ENDOGENOUS CREATININE gives a reliable approximation of the glomerular filtration rate as measured by inulin clearance.[4,7,9,21,26] Inulin clearance, although generally accepted as the most accurate index of glomerular filtration,[25] is technically complicated and impractical for clinical use. In contrast, the procedure for determining the rate of creatinine clearance (C_{cr}) is simple and can be carried out in any clinical laboratory.

During the past 14 years, the creatinine clearance determination has been used at the University of California Medical Center for the evaluation of renal function in patients with and without kidney disease. The technique we use and the normal standards established for healthy men and women were reported in 1951.[12] Recently, studies in this and other centers have provided further data on the range of normal values and the influence on the C_{cr} of various factors such as sex,[9,26] age,[6,27] and pregnancy.[24] Experience during this period also showed the superiority of the C_{cr} in assessing renal impairment, compared with the concentration of urea nitrogen, nonprotein nitrogen or creatinine in the blood. The present report reviews these findings from a clinical standpoint, illustrating the advantages of the C_{cr} by brief case histories.

ENDOGENOUS CREATININE CLEARANCE

Procedure

The rate of endogenous creatinine clearance is derived by relating the amount of creatinine filtered by the glomerulus per minute to the serum creatinine concentration. The determination requires a carefully timed urine collection and a single blood specimen (the patient need not be fasting).[1] Generally, we use a 12-hour specimen of urine collected overnight (from 7 p.m. to 7 a.m.). The collection

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Dr. Tjan is lecturer, Airlangga University, Surabaja, Indonesia; visiting physiologist, subsidized by AID—United States Public Health Service Traineeship Program in connection with the University of California Project in Medical Education.

may be started at any time of the day, however, and the collection period may vary from 20 minutes to 24 hours. For short collection periods, complete emptying of the bladder, adequate urinary flow and accurate timing are requisite. When the volume of urine obtained is less than normal (approximately 1,500 ml. per 24 hours), incomplete collection or poor hydration should be suspected. Urine obtained by cystoscopy and ureteral catheterization may be used for measuring the C_{cr} of each kidney. If urinary flow is adequate, a 20-minute specimen from each kidney is sufficient for this purpose. The same specimens may be used for measuring the ratio of sodium to creatinine in the urine from each kidney,[2] or for other modifications of the Howard test for the detection of unilateral renal disease.

After the collection of specimens, the volume of urine is measured. The concentrations of creatinine in urine and serum are determined according to the alkaline-picrate method of Folin and Wu, as modified by Peters.[20] The clearance rate is then calculated from the creatinine concentrations and urine volume by the standard clearance formula.[21] The value obtained is corrected to 1.73 square meters of body surface area.

Normal Values: Range and Variations

Normal values for this method were established by studies on healthy adult subjects.[12,26] The normal range of C_{cr} is 72 to 141 ml. per minute in men and 74 to 130 ml. per minute in women. Normal serum creatinine concentrations range from 1.0 to 1.6 mg. per 100 ml. in men and from 0.8 to 1.4 mg. per 100 ml. in women. As the serum creatinine concentrations of men and women differ significantly,[9] a single range of normal cannot be used for both sexes.

In some laboratories, serum creatinine concentrations ranging from 0.8 to as high as 2.0 mg. per 100 ml. are considered normal for both men and women. Concentrations as low as 0.4 per 100 ml. have been found in healthy children and as low as 0.6 mg. per 100 ml. in healthy women. The values in the higher range, however, date from the time visual colorimetry was used and are erroneous by present standards. In our experience, a concentration of 2 mg. or more per 100 ml. in either sex is always indicative of impaired renal function as evidenced by a decrease in C_{cr}. Conversely, as will be shown, serum creatinine concentrations within normal limits are sometimes found in patients with fairly severe renal insufficiency.

The C_{cr} varies normally with age. It can be used as an index of glomerular filtration in children aged three years or more. After the age of three, or in some infants as early as one year, the C_{cr} reaches the adult range.[16,27] For comparison with standards established for adults, the values obtained in children must be corrected to equivalent body surface area. After the age of 30, as reported by Davies and Shock,[6] the glomerular filtration rate begins to decline slowly. In the same report these investigators presented a formula for predicting normal clearance rates according to age.

From the fifteenth to the thirty-eighth week of pregnancy, the glomerular filtration rate is increased 50 per cent, and may remain at this high level for as long as six weeks postpartum.[24] One of our reported cases[13] illustrates the importance of considering such increases in determining the C_{cr} in pregnant women. The patient, a 30-year-old woman in the thirty-sixth week of pregnancy, was admitted to the hospital because of hypertension, edema, excessive gain in weight and proteinuria. The C_{cr} was 81 ml. per minute, serum creatinine concentration 0.9 mg. per 100 ml., blood nonprotein nitrogen 34 mg. per 100 ml. and uric acid 8.1 mg. per 100 ml. One week later, the serum creatinine concentration was unchanged, but the C_{cr} had decreased to 69 ml. per minute. A renal biopsy at that time showed glomerular abnormalities characteristic of pre-eclampsia. Delivery was normal. Five weeks later, when a second renal biopsy showed resolution of the pre-eclamptic glomerular lesions, the C_{cr} had risen to 154 ml. per minute and serum creatinine concentration was 1.1 mg. per 100 ml.

CREATININE CLEARANCE VERSUS OTHER CLINICAL "RENAL FUNCTION" TESTS

Impairment of renal function is commonly reflected by changes in the blood urea nitrogen and nonprotein nitrogen (NPN) levels. The concentration of these components in the blood, however, is also materially affected by factors such as protein metabolism, amount of protein in the diet, rate of urinary flow and alterations in extracellular fluid volume.[11,21] A low blood urea nitrogen level is found in a variety of conditions, including overhydration and rapid hydration, and in liver disease.[11] Gastrointestinal hemorrhage can increase the concentration of urea nitrogen in the blood through digestion of protein and intestinal absorption of large amounts of nitrogen. The nonprotein nitrogen concentration is similarly affected in such situations, since its major component is urea. The C_{cr}, in contrast, is not influenced by such factors, as shown in the following cases.

The effect of dietary protein intake on the C_{cr} and NPN in a woman with relatively stable renal failure is illustrated in Chart 1. A diet containing 100 gm. of protein daily resulted in a rise in NPN from 89 to 180 mg. per 100 ml. When the amount of dietary protein was decreased to 40 gm. daily, the NPN dropped to 59 mg. per 100 ml. These changes in NPN were not reflected in the C_{cr}, which re-

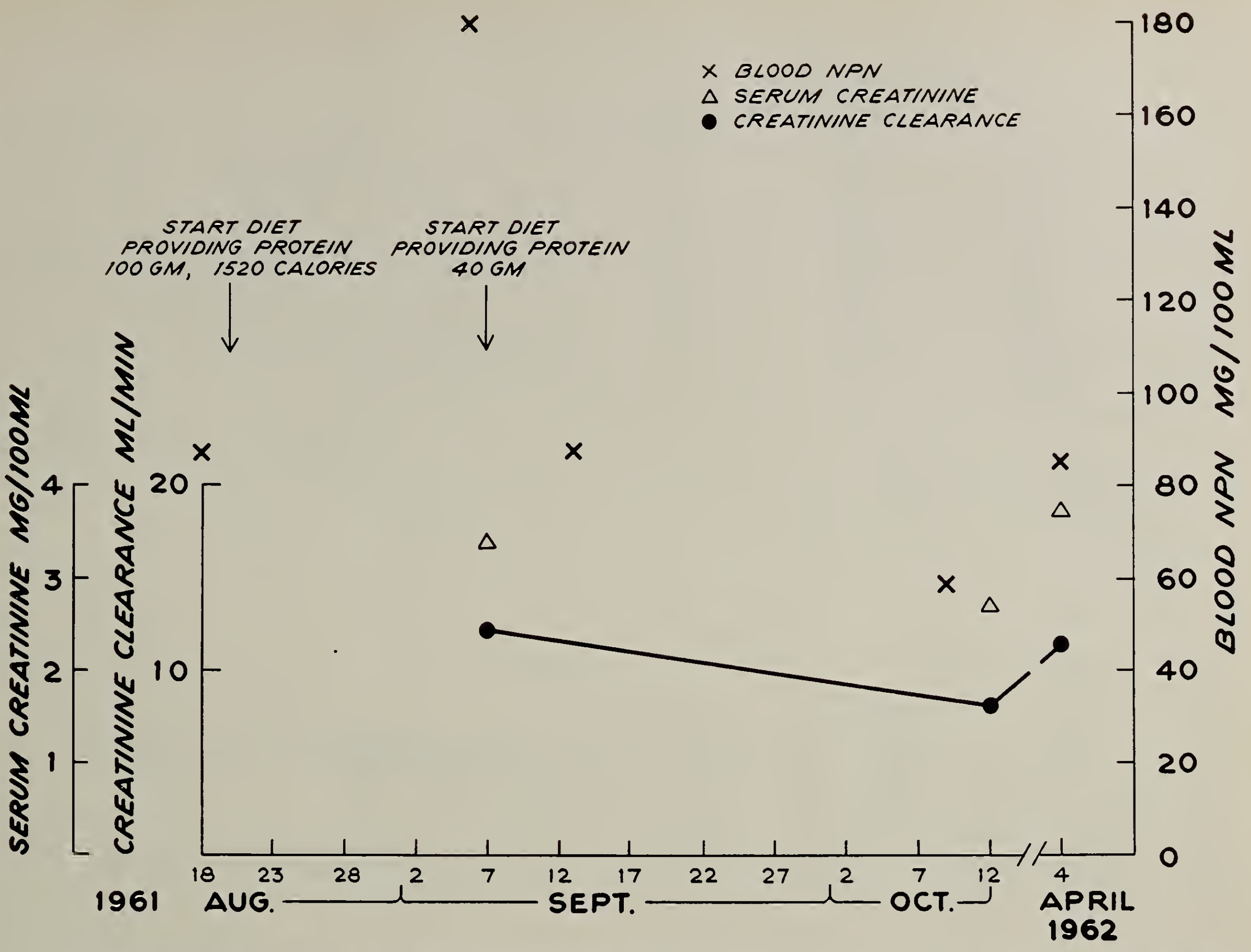

Chart 1.—Results of tests in a woman with relatively stable renal failure during periods of high and low dietary protein intake. Alteration in amount of protein in diet resulted in striking change in NPN, while C_{cr} remained approximately unchanged.

mained relatively unchanged. In another patient, a 55-year-old man, acute tubular necrosis (lower nephron nephrosis) developed after transurethral resection. Chart 2 shows the rapid return of the NPN to normal after diuresis, although glomerular function, as judged by the C_{cr}, was still significantly impaired. In a third patient, a 51-year-old man with the milk-alkali syndrome,[10] renal function improved greatly after gastric resection and omission of Sippy powders and milk from the diet. Several years later, he had an episode of gastrointestinal bleeding. As shown in Chart 3, intestinal absorption of blood resulted in a disproportionately high NPN, whereas the C_{cr} remained stable. The transient decrease in the C_{cr} during a second severe hemorrhage into the bowel probably reflected inadequate renal perfusion.

The serum creatinine concentration, unlike the blood urea nitrogen and NPN levels, is relatively unaffected by protein intake or urine volume. It does not provide an accurate index of glomerular function, however, unless related to urinary creatinine excretion.[7,9,16,17,26] The unreliability of the serum creatinine level alone as an index of renal impairment is shown by the data listed in Table 1. The records of ten patients with renal lesions were selected from the files of the Renal Service. In each a low C_{cr} (less than 70 ml. per minute) indicated some degree of renal impairment, although the serum creatinine level was normal or near normal. To determine the validity of the creatinine clearance values, inulin clearance determinations were performed. As shown in Table 1, the inulin clearance rate in all ten cases confirmed the presence of renal impairment as indicated by a low C_{cr}.

The table also shows the degree of discrepancy that may exist between the serum creatinine and creatinine clearance values. For example, in Case 5, a low C_{cr} of 31.9 ml. per minute was associated with a serum creatinine level only slightly higher than normal (1.7 mg. per 100 ml.). In Case 6, the clearance rate was 66 ml. per minute, over twice the C_{cr} in Case 5, yet the serum creatinine level was approximately the same (1.9 mg. per 100 ml.).

Another example of significantly reduced creatinine and inulin clearance rates in association with normal serum creatinine levels is shown in Chart 4.

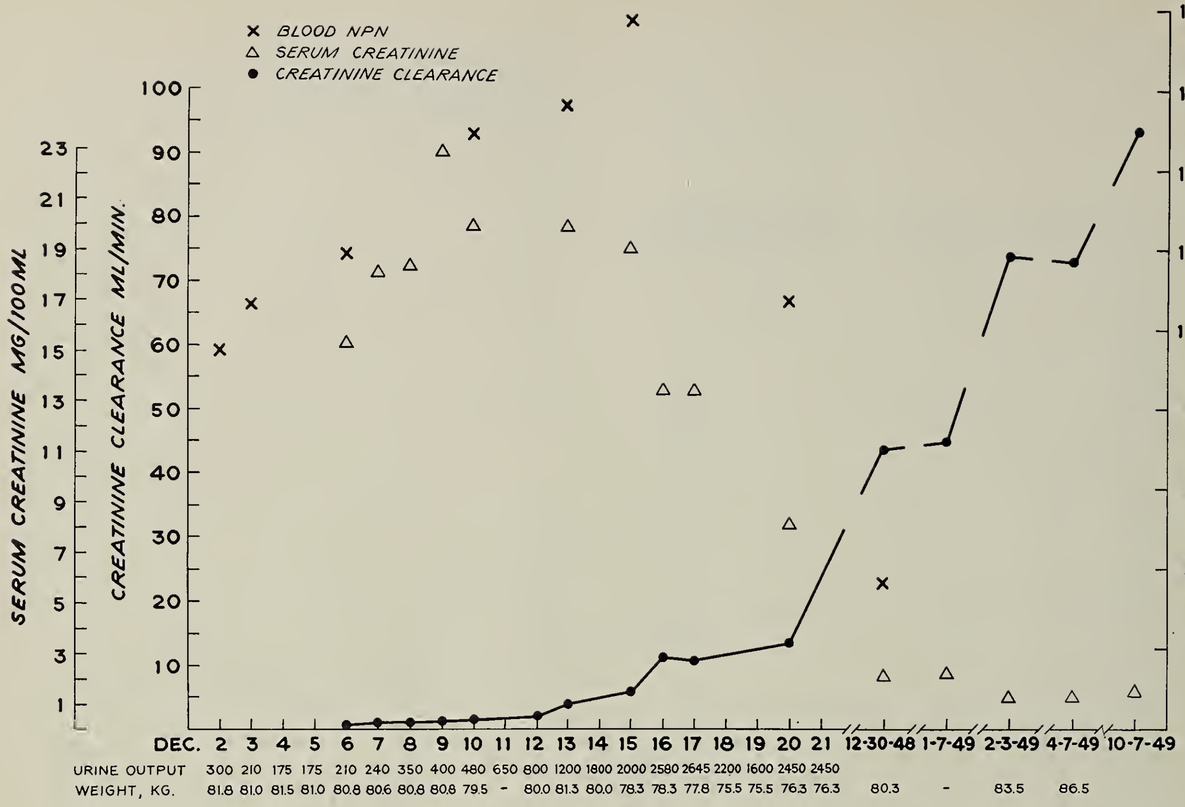

Chart 2.—Results of tests in a man recovering from acute tubular necrosis. After diuresis, NPN returned rapidly to normal levels, although renal function as measured by Ccr was still significantly impaired.

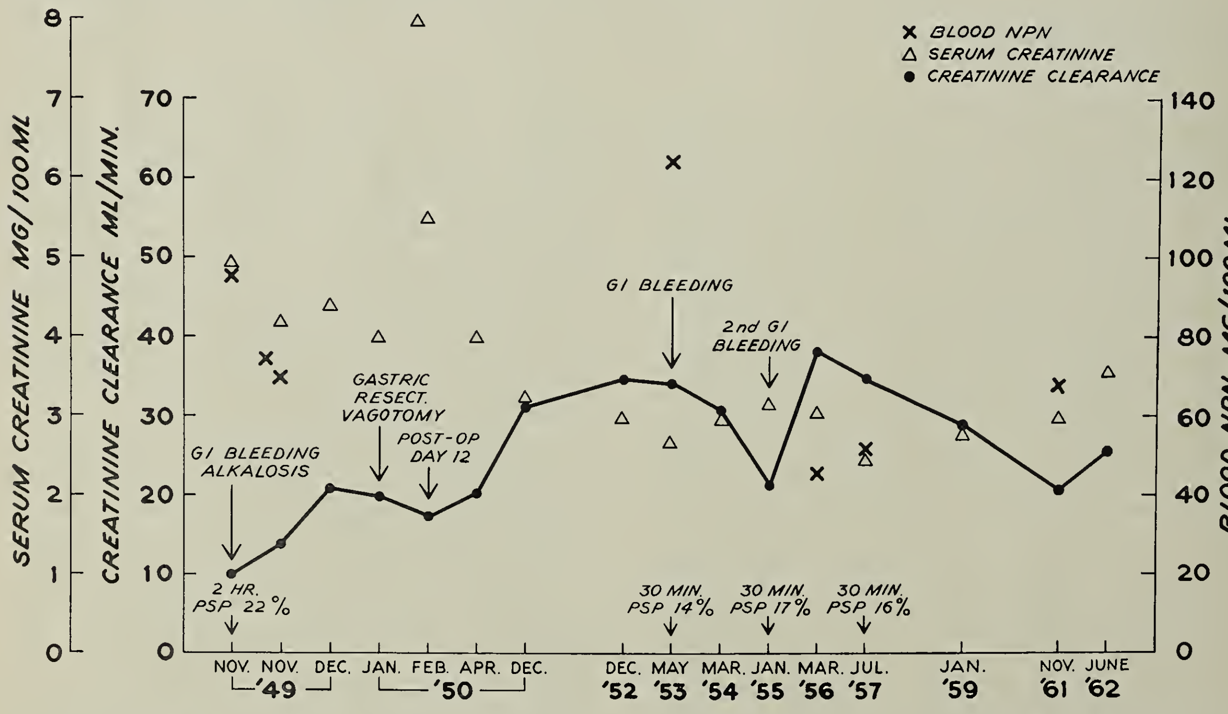

Chart 3.—Results of tests in a man with renal failure during gastrointestinal hemorrhage. During first episode of bleeding NPN rose, probably owing to intestinal absorption of blood, whereas Ccr remained stable. Temporary decrease in Ccr during second hemorrhage probably reflected inadequate renal perfusion.

TABLE 1.—*Accuracy of Creatinine Clearance Rate (C_{cr}) Compared with Serum Creatinine as an Index of Glomerular Filtration Rate (as Established by Inulin Clearance (C_{in}))*

Case No.	Sex	Age	Diagnosis	Serum Creatinine mg./100 ml.	Clearance Creatinine ml./min.	Clearance Inulin* ml./min.	Ratio C_{cr}/C_{in}
1	M	16	Congenital heart disease	0.9	57.5	62.5	0.92
2	M	37	Acute glomerulonephritis	1.2	58.0	62.5	0.93
3	M	42	Acute glomerulonephritis	1.2	69.0	63.0	1.10
4	M	19	Nephrotic state	1.3	63.8	56.3	1.13
5	M	70	Right kidney absent, diabetes mellitus	1.7	31.9	34.8	0.92
6	M	35	Chronic glomerulonephritis	1.9	66.0	52.0	1.27
7	F	15	Chronic glomerulonephritis	1.1	52.0	52.0	1.00
8	F	42	Renal tuberculosis	1.2	48.0	60.0	0.80
9	F	78	Mild nephrotic state, arteriosclerosis	1.4	43.0	47.0	0.91
10	F	79	Healed pyelonephritis, nephrosclerosis	1.4†	43.0	47.0	0.91

*Inulin clearance was performed by standard technics[25]; serum and urine concentrations were determined by the method of Roe, Epstein and Goldstein.[22]

†Nonprotein nitrogen was 35 mg. per ml.

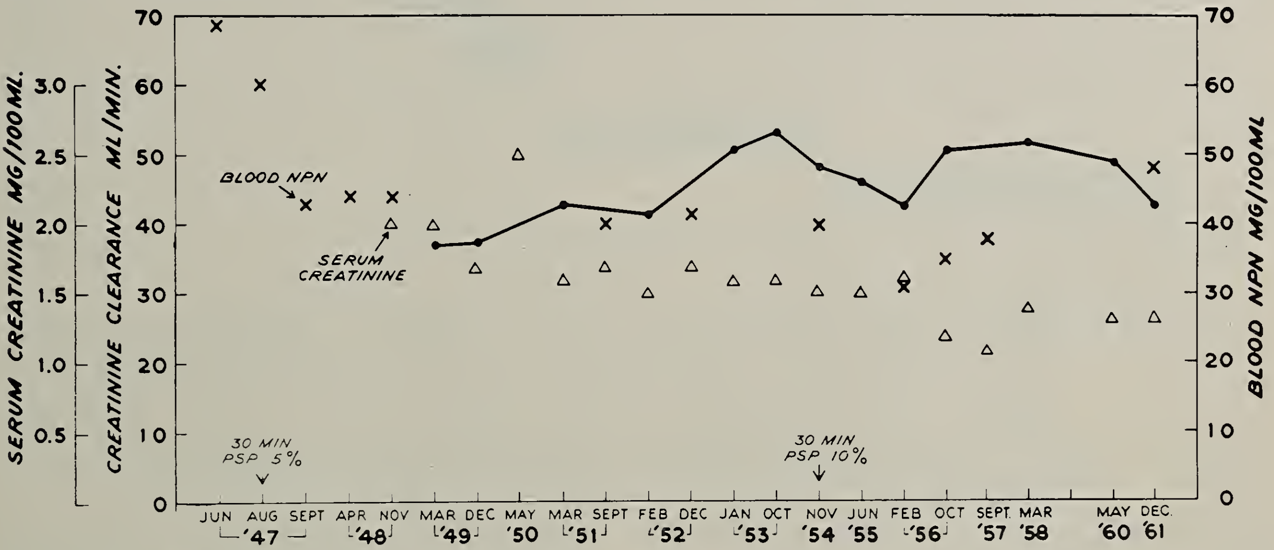

Chart 4.—Results of tests in a woman with chronic pyelonephritis and hypertension. After chemotherapy blood pressure returned to normal, and C_{cr} gradually increased to 45 to 55 ml. per minute, a glomerular filtration rate of roughly half normal. During ensuing years, C_{cr} did not rise above 55 ml. per minute, whereas NPN and serum creatinine levels were frequently normal.

The patient, a 65-year-old woman, had chronic pyelonephritis manifested by hypertension (blood pressure 170/100 mm. of mercury), proteinuria, bacteriuria and pyuria. Before treatment, the C_{cr} was 35 ml. per minute. Chemotherapy resulted in bacteriologic and clinical cure, with disappearance of symptoms and return of blood pressure to normal (130/80 mm. of mercury). During the next five years, renal function returned to about half normal as indicated by a C_{cr} of 45 to 55 ml. per minute, and the patient became and remained free of proteinuria. Although the C_{cr} has remained below 55 ml. per minute since that time, both serum creatinine and blood NPN levels have frequently been within normal limits. The patient has remained asymptomatic, and a recent determination with diet unrestricted showed an NPN of 35 mg. per 100 ml.

The phenolsulfonphthalein (PSP) test is an index of renal plasma flow and tubular excretion. Although a renal lesion may affect both glomerular and tubular function, the degree of involvement is not necessarily the same. The PSP test is therefore a valuable adjunct to the creatinine clearance determination. However, we have found that in severe renal failure as indicated by a C_{cr} below 20 ml. per minute, the amount of PSP excreted is usually too small for accurate measurement. Intravenous urography has a similar disadvantage at this low level of renal function, in that the dyes used are likely to be insufficiently concentrated for adequate visualization of the calyceal systems.

VALUE OF CREATININE CLEARANCE IN PROGNOSIS

In chronic renal failure, the clinical manifestations are not necessarily well correlated with biochemical changes. We have found, however, that a C_{cr} below 30 ml. per minute is often accompanied

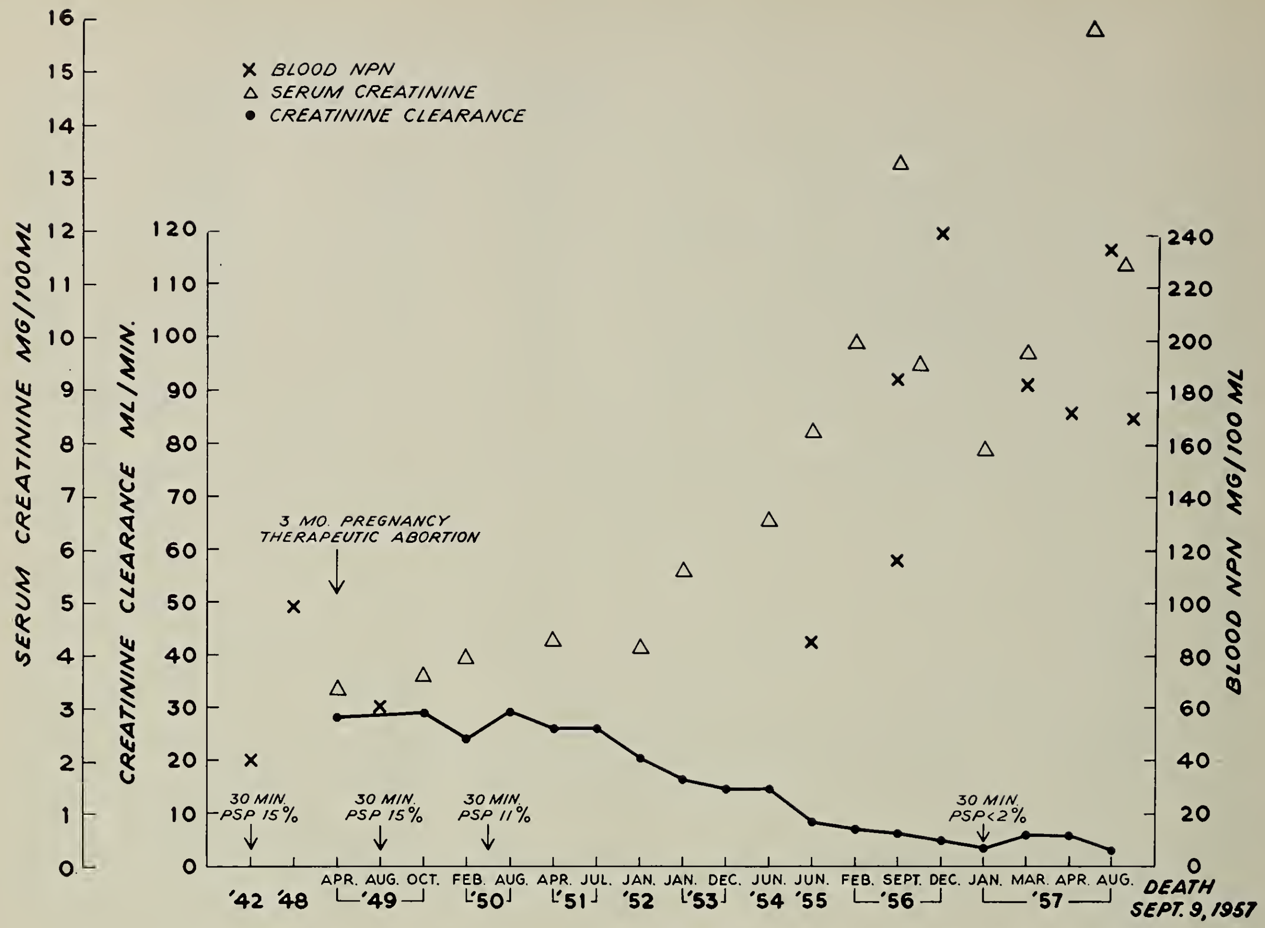

Chart 5.—Results of tests in a woman with chronic glomerulonephritis without hypertension, leading to death in eight years. Slow, regular decline in renal function was accurately reflected only by decrease in C_{cr}.

by weakness, fatigability, anemia and electrolyte disturbances. In general in such cases, the prognosis is poor. A further decrease in C_{cr} to 10 ml. per minute or below is associated with an increased incidence of signs and symptoms. If this low rate of clearance persists, the prognosis is very poor. The findings in 21 cases of fatal chronic renal disease[26] illustrate this point. In 17 of the 21 patients, repeated determinations showed a C_{cr} persistently below 10 ml. per minute. Of these, only two patients were alive nine months after the C_{cr} had dropped to this low level. The outcome in chronic renal disease, however, seems to depend not only on the rate of glomerular filtration but also on the rate of change. In chronic renal insufficiency, a rapid decline in C_{cr} indicates a short survival time. If the patient has hypertension as well, the time of survival is likely to be even shorter.

The following examples show the value of the C_{cr} in determining prognosis. A 36-year-old woman had chronic glomerulonephritis without hypertension, leading to her death eight years later. During the eight-year-period, as shown in Chart 5, a slow, steady decrease in C_{cr} was the only accurate laboratory evidence of the progressive course of disease. Another patient, a 43-year-old man, had pyelonephritis manifested by hypertension as a complication of polycystic kidney disease. Intensive chemotherapy resulted in bacteriologic cure and an increase in C_{cr} from 6 to 28 ml. per minute (Chart 6). As hypertension persisted and became worse despite treatment with reserpine and hydralazine, the C_{cr} showed a progressive, parallel decrease. As can be seen in Chart 6, the values obtained for NPN remained approximately the same when the C_{cr} showed a decided change, from 6 ml. per minute to 28 ml. per minute. Thus, even when the bacterial infection was suppressed, the NPN did not accurately reflect changes in renal function.

USE OF CREATININE CLEARANCE IN ASSESSING HYPERTENSIVE THERAPY

Because of the injurious effects of hypertension on kidney function,[18] treatment with antihypertensive drugs seems especially indicated in hypertensive patients with impaired renal function. Yet caution must be used in administering such agents, particularly if severe renal insufficiency is present.

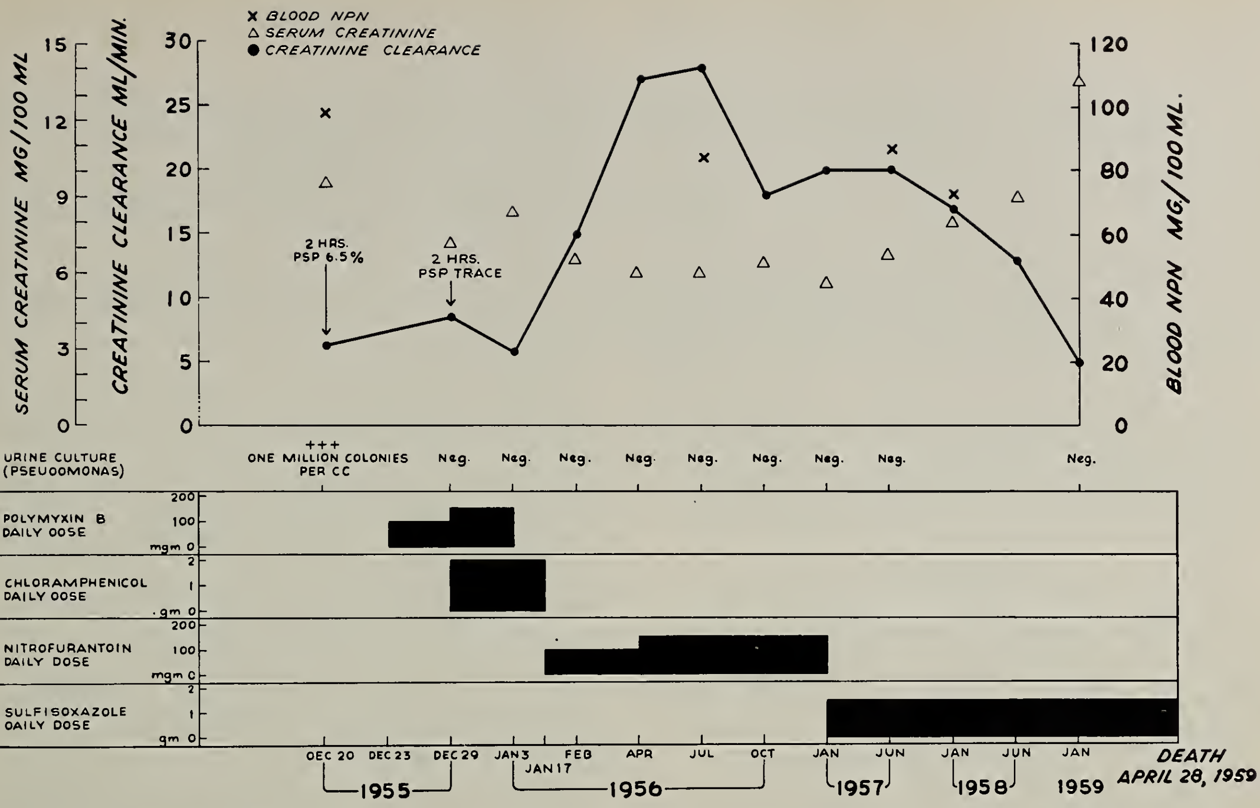

Chart 6.—Results of tests in a man with polycystic renal disease, pyelonephritis and hypertension. Initial improvement after chemotherapy was followed by persistent, progressive hypertension and renal insufficiency, as indicated by decrease in C_{cr}.

In hypertensive patients with a C_{cr} below 30 ml. per minute, rigid restriction of dietary sodium or administration of saluretic drugs may cause electrolytic depletion, especially of sodium and potassium, tending to promote renal failure.[15] In such patients, the use of sympatholytic drugs, such as hexamethonium and mecamylamine, often results in further depression of renal function, and occasionally even in anuria. We have encountered few such problems with guanethidine, reserpine and hydralazine. A new antihypertensive agent, alpha methyl dopa,* appears promising for the treatment of hypertensive patients with renal failure, since it usually does not result in further impairment of renal function.[5,8,14,19] Dollery and Harington,[8] however, observed increased azotemia in some of their patients treated with this drug.

Because the blood urea nitrogen and NPN levels do not provide an adequate measure of the glomerular filtration rate, we strongly urge the use of the creatinine clearance determination in assessing the effects of antihypertensive drugs in patients with renal insufficiency. The C_{cr} should be determined before such treatment is begun and at weekly intervals thereafter, or more often if indicated, until it is established that the glomerular filtration rate is not significantly decreased.

LIMITATIONS OF CREATININE CLEARANCE DETERMINATION

Determination of the C_{cr}, like all laboratory tests, is subject to technical error. Both De Wardener[7] and Brod[3] have described a number of factors that lead to erroneous rates of clearance or interfere with the satisfactory performance of clearance determinations.

We, like others, have found that the C_{cr} may be misleading in certain clinical conditions. For instance, even when there is complete loss of function of one kidney, the glomerular filtration rate may be within normal limits. Such cases of unilateral kidney disease may not be detected by the C_{cr}, or by other tests designed to measure total renal function. Even when both kidneys are functioning normally, partial obstruction of the lower urinary tract or of both upper tracts is likely to be reflected by a low C_{cr}, suggesting primary renal disease to the unwary. In severe anemia, shock or dehydration, renal vascular obstruction or congestive heart failure, circulatory renal failure can lead to a decrease in function in otherwise normal kidneys, resulting in low C_{cr}.

Despite these limitations, the creatinine clearance determination has obvious advantages over the other commonly used "renal function" tests. Schreiner and Maher[23] stated that they found the C_{cr} "an extremely useful tool, perhaps the single most valuable one, in the serial follow-up of patients with chronic renal disease." We agree, and would add that it is similarly useful for the long-term observation of patients with hypertension, acute renal disease or systemic disease implicating the kidneys, as well as a screening test for the early detection of renal insufficiency. The C_{cr} is also useful in evaluating the effects of treatment with potentially nephrotoxic drugs. Winn[28] has found the C_{cr} much more informative than the blood urea nitrogen determination in following patients with coccidioidomycosis during treatment with the highly nephrotoxic drugs amphotericin B.

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*It should be cautioned that alpha methyl dopa, because it is easily oxidized, tends to interfere with the determination of urinary and serum creatinine by the alkaline-picrate method.

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Cardiac Output During Cardiopulmonary Bypass

Animal Experiments as a Guide to Flow Rate

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• Superior total body perfusion during cardiopulmonary bypass in dogs is achieved by duplicating, in each individual case, the actual operative cardiac output, rather than by relying on the currently recommended perfusion flow rates.

A highly accurate method of measuring the cardiac output is presented using the gated sine-wave electromagnetic flowmeter. Simplicity and sensitivity of the method enable the operator to measure the flow in situ (in the intact canine ascending aorta) and thus to determine a truly representative cardiac output before the cardiopulmonary bypass is effected.

An adjustable hydraulic pump in conjunction with the electromagnetic flowmeter is used to substitute the natural cardiac action in order to maintain the normal hemodynamic state by providing a pulsatile flow of proper magnitude. The procedure is technically simple and, supported by favorable experimental evidence, is recommended for clinical use in open heart operations.

THE TASK of the mechanical pumping device (artificial heart) used during the cardiopulmonary bypass procedures would seem to be simple enough: to replace the heart in its sole mechanical function of providing adequate body circulation.

Yet, what is an adequate circulation? We can arrive at some anticipated "normal" blood flow rate which, however, in many an individual case could also be a critical rate, supplying an amount of arterial blood which is either too small for normal body functioning, or too excessive to be safely handled by the vascular tree. Any average value has, therefore, only a limited meaning for a particular case.

The answer, no doubt, is to maintain a circulation that is adequate in each individual case. This adequacy is best judged by how closely the extracorporeal blood flow rate duplicates the individual cardiac output. By the method described below the measurement of actual cardiac output is quite feasible and this vital, but heretofore elusive, parameter becomes an easily determinable entity.

METHOD

Healthy mongrel dogs, anesthetized with sodium pentothal (30 mg. per kg. of body weight), were subjected to cardiopulmonary bypass with normothermic, total body perfusion utilizing the disc type oxygenator[3] and the Davol* pump.[4] The latter is a pump of hydraulic type with adjustable chamber volume (stroke volume) and frequency of contraction (pulse rate), providing pulsatile flow.

Using sterile technique and tracheal intubation with manually assisted respiration (80 per cent nitrous oxide plus 20 per cent oxygen), sternum-splitting thoracotomy was performed.

A portion of the ascending aorta below the arch was dissected free of the periaortic fat, just enough to accommodate the flowmeter probe. The aorta was gently compressed with fingers and passed through the slit into the lumen of the selected probe, connected to the gated sine-wave electromagnetic flowmeter.[1]† The measurement of flow was made simply by reading off the value in cubic centimeters per minute on the flowmeter dial, representing the base value for cardiac output under the operative conditions. The stroke volume was then calculated from the simple formula:

$$\text{stroke volume} = \frac{\text{cardiac output}}{\text{pulse rate}}$$

Using these values for stroke volume and pulse rate, settings on the corresponding dials of the Davol pump were made accordingly.

One femoral artery was cannulated by means of a metal arterial cannula connected to a tygon tubing leading from the arterial pumping chamber of the "artificial heart." Both venae cavae were cannulated through the right auricular appendage with polyethylene cannulae leading back to the reservoir of

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The opinions or assertions contained in this article are the private ones of the writers and are not construed as official or reflecting the views of the Navy Department, or the Naval Service at large.

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†Medicon, 3700 S. Broadway, Los Angeles 7, California.

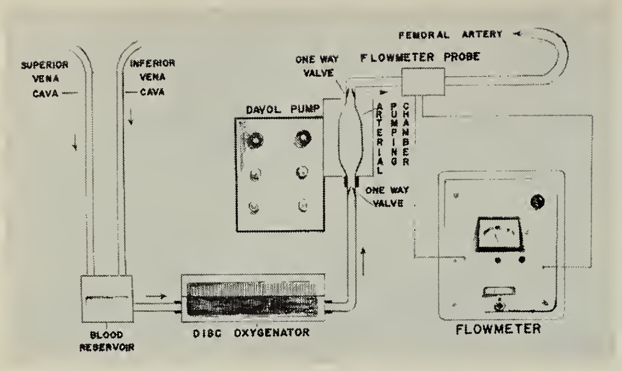

Figure 1.—Diagram of the perfusion system.

the rotating disc oxygenator. Caval return was thus established using gravity drainage. (See Figure 1.)

The venae cavae were then occluded tightly around the cannulae and perfusion was begun, using the pre-set values for stroke volume and pulse rate on the Davol pump to duplicate both the measured cardiac output and the pulsatile type of flow.

Another flowmeter probe, inserted in the arterial line, was used to double check the amount of blood being actually delivered to the body.

A constant partial pressure of carbon dioxide in the arteriolized blood was maintained at a level sufficient to avoid an undue pre-perfusion respiratory alkalosis and to prevent possible constriction of the cerebral arterioles.

Animals received no transfusion, antibiotics or other supportive therapy during the procedure.

RESULTS

From the results obtained, the most striking finding was the stability of vital signs throughout the procedure.

After a very transient drop in blood pressure initially, due to the gradual onset of perfusion (retrograde for the larger portion of body supplied by the descending aorta), there was a prompt restoration of blood pressure to the preoperative level which was subsequently sustained during the whole procedure. There was an insignificant decrease in the pulse pressure (Figure 2).

This was in sharp contrast with the previous series of cases in which the roller (deBakey) pump, providing nonpulsatile flow, was employed. In those cases—as other observers[7] have reported—it was common to see a significant drop in arterial pressure at the beginning of perfusion (amounting to about 60 to 80 mm. of mercury systolic and 40 to 50 mm. diastolic) down to the level of 55/35 mm. with the mean pressure oscillating at about 45 to 50 mm. There was usually a small gradual increase in this pressure as the perfusion progressed, but seldom to values higher than 70 to 80 mm. This was true even in cases with somewhat decreasing perfusion rate during the run, suggesting a gradual increase in the peripheral vascular resistance. The pulse pressure was invariably very narrow.

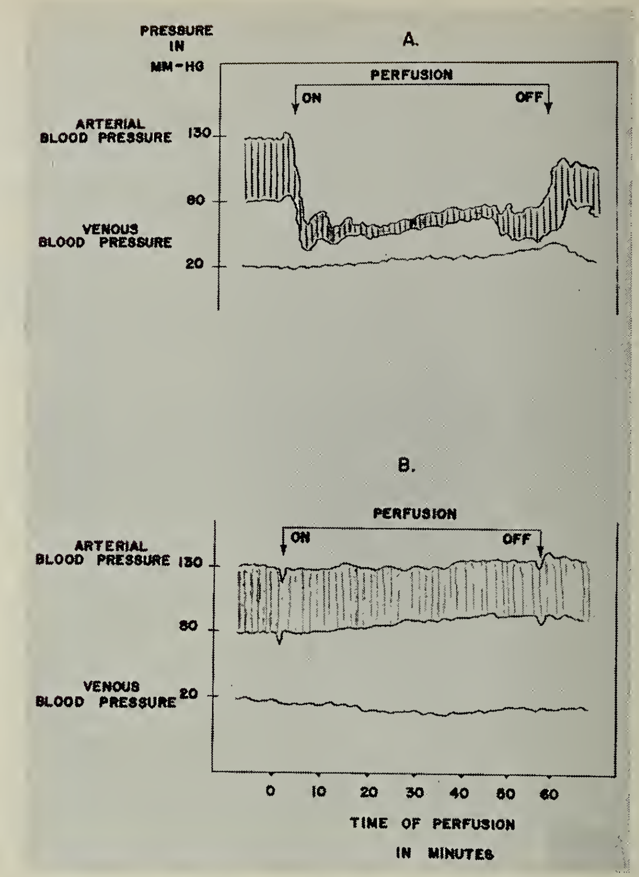

Figure 2.—Hemodynamic data recorded during the perfusion in dogs. *A*: deBakey pump, nonpulsatile flow, 70 cc. per min. per kg. *B*: Davol pump, pulsatile flow, cardiac output duplicated.

Venous pressure remained constant throughout the procedure. Hemolysis was negligible.

The general condition of the animals also remained remarkably stable. There was no evidence of stasis, cyanosis, pulmonary edema, increased bleeding or central nervous system manifestations. The animals were perfused for one to two hours with no apparent change in the general pre-perfusion condition and, indeed, it seemed that the perfusion could have been continued indefinitely. It was clear to everyone engaged in the study that we were dealing with a physiologically superior type of total body perfusion.

The flow curves taken from the descending aorta showed similarity to the normal pattern (Figure 3).

Although the cardiac output measured did not include the coronary flow, it was thought to be quite representative of the actual cardiac output,*

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*It should be borne in mind that this cardiac output, measured in thoracic surgical cases under general anesthesia, is considerably smaller than the normal (preoperative) cardiac output.

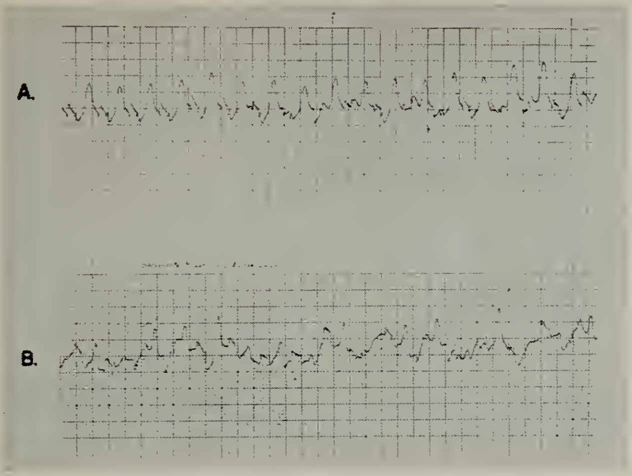

Figure 3.—Flow curves taken from the thoracic aorta in dog. *A*: Flow curve before perfusion. *B*: Flow curve during perfusion (retrograde).

since the coronary flow constitutes only some 5 per cent of the total cardiac output and thus can be disregarded for our purposes. Accuracy of the electromagnetic flowmeter used was well within 5 per cent.

There were no disturbing deviations in chemical contents of the blood. Postoperative acidosis was slight—no greater than after any other routine thoracic operation without cardiopulmonary bypass.

DISCUSSION

The experimental procedure here described was not used in humans. To bridge from the results observed in dogs requires a contemplation of pertinent related physiologic knowledge of the human organism.

There are two main integrating mechanisms in the human body: the blood stream and the nervous system.[2] Since during operation under light anesthesia the situation would appear stable enough to regard the nervous system as constant, we can concentrate on the other main integrating body mechanism to which it is reciprocally related—the blood circulation. There is a logical conclusion that if we only maintained the blood supply at normal, we would in turn have a normally functioning central nervous system with all the complex vasomotor control represented at its various levels—that is, cortex, hypothalamus, hindbrain and spinal cord.

The big question of what a satisfactory rate of blood flow is for the normothermic, total body perfusion has been answered by the standard recommendation of 70 cc. per min. per kg. (2,300 cc. per min. per m^2) diminishing to about 60 cc. per min. per kg. (2,500 cc. per min. per m^2) for an adult and increasing to some 75 cc. per min. per kg. (2,500 cc. per min. per m^2) for a small child. And these values may further change to less than 50 cc. per min. per kg. (1,600 cc. per min. per m^2) or more than 200 cc. per min. per kg. (6,500 cc. per min. per m^2) in some cases.

In dogs, flows of 25 to 50 cc. per min. per kg. have come to be regarded as low; those of 70 to 80 cc. per min. per kg. as high. For purposes of our discussion, however, a low flow is defined as anything less than normal flow, "normal" being an individual flow adequate to fully sustain the normal body functions of the subject under operative conditions.

Thanks to the body homeostatic mechanisms, we can take considerable liberties with the circulatory rate without too much hazard. Thus, for short periods the body can be perfused safely at rates far below those that are normal resting values. However, if such an extracorporeal circulation rate is continued for more than 15 to 20 minutes, inadequate support of body tissues can begin to build up serious and irreversible changes which are later manifested by damage to brain and other important organs, and they can lead to postoperative complications or even fatality.[5]

In actual practice, the pump is usually started at an average recomended flow rate and then adjusted according to the response of the subject as reflected by the secondary manifestations of the arterial and/or venous pressures. Since the changes in these pressures lag behind the changes in flow, the best way is to be guided by the measurement of the actual blood flow (cardiac output) and to take over, in the right "gear," so to say, in the very first minute of the perfusion to prevent the cumulative changes and vicious circle of an inadequate circulation from even getting started.

In order to elucidate the key importance of adequate circulation, let us briefly consider the chief physiologic and biochemical changes likely to take place during an inadequate total body perfusion and their relationships to blood flow.

1. *Oxygenation.* To prevent the deleterious effects of anoxemia, it is recommended that the oximeter reading of blood delivered to the body from the oxygenator be always greater than 90 per cent, and at 95 to 98 per cent as the best saturation. It should be kept in mind, however, that the oximeter readings represent a merely static consideration and that even the 100 per cent oxygen saturation can spell anoxia for the body tissues if the flow is too slow—a situation comparable to cardiac failure. Venous oxygen saturation is proportional to the blood flow and it can be actually shown that it is better to perfuse faster with blood somewhat low in oxygen content than too slow with blood that is fully oxygenated.

2. *Blood Pressure.* While the decrease in peripheral pressures (both arterial and venous) follows the decreasing rate of flow, there is a certain time lag between these changes. And while the pressure curves are related to the magnitude of flow, they are also related to its character—that is, nonpulsatile versus pulsatile (the latter, of course, being more physiologic). So much so that it is doubtful if a truly satisfactory total body perfusion can be accomplished with a nonpulsatile flow, even though otherwise adequate in magnitude.

In almost all previous experiments in which the nonpulsatile flow and an estimated flow rate were used, the arterial pressure was subnormal during most of the perfusion. By definition, this situation is tantamount to a shock state in all clinical and operative conditions, without exception.

3. *Acid-base Balance.* The disturbances of acid-base equilibrium can account for many biochemical changes correlating with concomitant occurrence of untoward functional manifestations.

Mild metabolic acidosis is usual during general anesthesia and while accentuated somewhat by the operative trauma (causing a reflex epinephrine secretion), it is only a minor factor in producing a significant postoperative acidosis. Further acidosis is preventable by full oxygenation of arterial blood and by eliminating unnecessary pre-perfusion respiratory alkalosis (by maintaining proper carbon dioxide concentration in the oxygenator, usually 1.5 to 2 per cent).

Anoxia, on the other hand, by its strong stimulation of the adrenal medulla, is a much more powerful agent. Inadequate perfusion rate can cause hypoxic type of acidosis within the tissues and thus contribute significantly to the metabolic acidosis at the intracellular level.[6] Its degree determines the concentration of anaerobic metabolites (principally lactic acid) and if this progresses beyond certain limits, death of the tissue ensues.

Plasma pH is inversely related to the blood lactate concentration which, in turn, is directly related to venous oxygen saturation, which is again directly related to the perfusion rate. Therefore, development of a persistent metabolic acidosis is much more severe in the low-flow group where the degree of oxygen extraction by the tissues is greater.

Proper functioning of body organs also depends on all of the above factors. To give but a few examples: the brain responds to the deficit in adequate blood supply by changes in cortical activity as detected by the electroencephalogram; kidneys by a decreased urine production (output in the order of 10 to 20 cc. per hour, common during routine perfusions, is consistent with urinary suppression); in the case of the liver, decrease in temperature by 4 to 5° F., usually seen at the end of a normothermic perfusion, is suggestive of regional anoxia secondary to an impaired blood flow through the organ. Also, bleeding which tends to be more pronounced in prolonged low-flow perfusions may fall in the same category.

Thus it is obvious that all the above changes are by and large secondary to the change in the hemodynamic state of the organism and that from the two possible errors in perfusion, it is much safer to err on the high side of the adequate flow.

Once the perfusion rate becomes optimal for a given case, however, no striking benefit can be expected from an additional increase in the flow rate. Sooner or later, of course, a point would be reached when the body could not safely accommodate the offered input.

CONCLUSION

Inadequate blood circulation, both per se and via the progressive secondary changes it initiates, endangers the whole body and unfavorably influences the final outcome of any surgical case. It is imperative, therefore, that especially in cases subjected to extracorporeal circulation an adequate perfusion flow rate be maintained at all times.

Adequacy of perfusion is best assessed in terms of the individual cardiac output under normal operative conditions. Accurate measurement of this output is easily accomplished by means of an electromagnetic flowmeter.

A hydraulic pump with adjustable stroke volume and pulse rate is more physiologic than the roller pump inasmuch as it provides a pulsatile flow that can be tailored to the needs of any given subject. The fundamental pattern of the natural mechanical action of the heart is thus faithfully reproduced.

The system consisting of the adjustable hydraulic pump with disc oxygenator and utilizing the electromagnetic flowmeter has, in our hands, proved to be the most physiologic approximation of the natural situation in the organism, as evidenced by the impressive stability of vital signs and absence of lacticacidemia even during prolonged animal perfusions.

Determination of the individual cardiac output as the most important single parameter and its duplication during a normothermic, total body perfusion is the key factor of a successful cardiopulmonary bypass procedure. Since most other parameters are mere functions of blood flow, monitoring them—save in some abnormal cases—can be dispensed with during an adequate perfusion. The described method of measuring the actual cardiac output under normal operative conditions in dogs is thus rendered easily practicable and, on the basis of experimental observations in dogs, is considered safe for clinical use.

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Anal Carcinoma

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• Carcinoma of the anus is a rare tumor when skin tumors which may have arisen from the perianal skin are excluded. A significant proportion of anal carcinomas, exclusive of those from perianal skin, may very well have their origin from the intermediate zone of transitional epithelium and its anal ducts, which would account for the different histological patterns presented by these cancers. These tumors are frequently described as of low grade malignancy and indeed some of them may be; but, the majority behave as very aggressive carcinomas, capable not only of rapid and extensive local invasion but also capable of lymph node metastasis. The treatment should be surgical and aggressive if operation is feasible.

Carcinoma arising in the ano-rectal junction and anus is the least common major malignant lesion derived from the epithelial elements of the gastrointestinal tract.[4] Pack,[8] after an extensive study of anal and rectal neoplasia, also concluded that epithelioma in this region was comparatively rare, with an incidence of 2 to 4 per cent. Lynch,[7] in a review of 491 cases of cancer of the rectum and pelvic colon, reported 15 cases of epithelioma, an incidence of 3 per cent. Hankins and Harding[3] found these lesions to make up 1 per cent of all primary new growths found in the gastrointestinal tract and approximately 3 per cent of carcinomas arising in the large bowel.

Our decision to review the subject of anal carcinomas was brought about by a recent spate of tumors reported as "transitional cell carcinomas." This paper is concerned with a review of the subject and a study of all private patients coming under our care during the past ten years who had carcinoma of the large bowel, rectum and anus. There were 148 cases, seven of them carcinoma of the anus, an incidence of approximately 1.5 per cent of the colo-rectal group.

Types

The multiplicity of names applied to tumors of the anus is confusing. They have been classed separately as squamous cell carcinoma, basal cell carcinoma, basaloid carcinoma, acanthoma of the anus, epidermoid carcinoma of the anus, cloacogenic carcinoma and transitional cell carcinoma. It is not at all surprising to find this array of names for this tumor in the light of the now accepted origin of some of these tumors from the modified epithelium (transitional) of the intermediate zone which separates the columnar epithelium of the rectum from the squamous cell epithelium of the anal canal. This zone can be identified both grossly and microscopically and varies in length from 3 mm. to 1 cm. and can be quite readily seen with the naked eye as the area marked by a circular zone corresponding to the columns and sinuses of Morgagni and terminating at the level of the anal valves. It represents a persistent remnant of the cloaca of the embryo. The first reference to this important area was made by Herrmann and DesFosses[5] in 1880. Tucker and Helwig[11] in 1935 again called attention to this zone and to the fact that the rectal mucosa does not join directly with the epidermis of the anal canal.

More recently, Grinvalsky and Helwig[2] said, "Inasmuch as carcinomas of the ano-rectal junction have histological patterns that relate them to the embryological remnant of the cloaca, we propose the term *transitional cloacogenic carcinoma* as the appropriate designation of these tumors." As was shown by these investigators, this circular zone represents a remnant of embryologic cloaca, with mucosa histologically similar to that of urethra and bladder. Approximately eight anal ducts from the vestigial anal glands empty into this zone. These ducts are lined proximally with transitional type epithelium which becomes cuboidal and often squamous in the deeper portions.

If this thesis can be accepted (and present evidence certainly points toward this conclusion), then some of these anal tumors, with various histological patterns, can be assumed to have their origin from the circular zone so well described by Grinvalsky and Helwig, which would explain the presence of tumors containing transitional type cells, basal or basaloid type cells and even squamous type carcinomas. Occasionally the tumors are found to show a single cell type but more often a mixture of types. This is easily explained on the basis of their origin from the embryonic cloaca and the anal ducts.

Predisposing Causes

Little is known about the etiology of carcinoma of the anus. However, Rosser,[9] in a study of the

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TABLE 1.—*Summary of Data on Seven Cases of Anal Carcinoma*

Case	Sex	Age	First Symptom	Treatment	Year	Cell Type	Survival
1.	F	42	Bleeding at stool	C.A.P.*	1957	Squamous	7 years
2.	F	38	Bleeding piles	C.A.P.	1955	Squamous	6 years
3.	F	50	Constipation	C.A.P.	1956	Squamous	5 years
4.	F	46	Constipation	C.A.P.	1956	Squamous	1 year, then died
5.	F	53	Bleeding	Exenteration	1957	Squamous	Died of disease 11 months
6.	F	70	Rectal bleeding	C.A.P.	1960	Transitional	Living and well 1 year
7.	F	50	Rectal bleeding	C.A.P.	1961	Transitional	Living and well 1 month

*C.A.P. = Combined abdomino-perineal resection.

relationship of chronic inflammatory lesions of the rectum to neoplasia, described three microscopically proven epidermoid carcinomas of the anus. It is of interest that one patient in our series (Case 4, Table 1) had a 15-year history of multiple rectal infections, principally fistulae. Another patient (Case 5), a 53-year-old woman had a history of heavy irradiation for carcinoma of the cervix given ten years before treatment for anal carcinoma. Pronounced atrophy and prominent telangectasia in the adjacent skin resulted. A third patient (Case 3) 50 years of age when first seen with anal carcinoma, gave a history of having had colostomy for "rectal stenosis" which had been variously diagnosed as lymphopathia venereum and tuberculosis. For approximately three years she had defecated from an artificial anus. It had then been closed and bowel function restored some 11 or 12 years before the development of the malignant lesion of the anus. Features of these three cases further suggest chronic infection and irritation as a contributing factor to the development of malignancy in this area.

Sex Incidence

A predominance of women in most reported series of anal carcinoma has been commented upon by several authors. The usual ratio given is three women to one man. In this series all the seven patients were women. The youngest was 38 years of age and the oldest 70.

Symptoms

The symptoms of carcinoma of the anus vary with the two clinical types of tumor, exophytic and endophytic. Tumors of the exophytic type are visible and can be palpated as a mass by the patient; the endophytic occur high in the anal canal.

The exophytic lesions make themselves known to the patient by the presence of a palpable or visible growth, and in most instances they are associated with bleeding at stool. Those of the endophytic type usually come to notice through rectal bleeding. Pain and tenesmus are frequent accompanying symptoms.

Treatment

All seven patients were treated by radical operation—combined abdomino-perineal resection with very wide resection of perianal skin, total removal of the contents of the ischiorectal fossa and near total excision of the levator ani muscles. The perineum and posterior vaginal wall were usually removed; in addition in one case the coccygeal segment posteriorly also was removed. Buxton[1] emphasized how frequently the vaginal wall is involved. In one case total pelvic exenteration and construction of a substitute ileal bladder were carried out because of extension forward into the vagina and bladder.

Inguinal lymph node dissection enters into every discussion of the treatment of this tumor. The policy we have arbitrarily followed during the past ten years is not to do inguinal lymph node dissection prophylactally. If there is evidence of clinical control of the primary tumor, then prompt radical inguinal lymphadenectomy would be done when clinical evidence of involvement occurs later. Fortunately, none of the seven cases needed this additional operation. Stearns[10] questioned the value of prophylactic groin dissection on practical grounds. In his series, the salvage rate was quite low.

Results

At the time of this report, one patient had been alive seven years after operation, another six years and another five years without clinical evidence of recurrent disease. Two patients are dead, one a 46-year-old woman with severe diabetes and arteriosclerosis who died of concomitant disease one year after operation but without recurrence of the neoplasm as proven by postmortem examination. The second patient who died was the 53-year-old woman in whom exenteration was done. This patient did extremely well and had excellent palliation until approximately six weeks before her death, which was brought about by extensive intraperitoneal and visceral metastasis. In the two remaining cases in this series only a short time had elapsed between operation and the preparation of this report.

We are persuaded that this disease can be controlled effectively only by thorough surgical extirpation. We have carefully avoided local excisions or half-hearted surgical intervention.

In our two most recent cases, in both of which the lesions were of the endophytic type and were situated high in the anal canal, the tumors were classified by the pathologist as "transitional cell type, characteristic of cloacogenic carcinoma." Lone, Berg and Stearns[6] noted that "basoloid" histological characteristics were associated with relatively favorable prognosis. In their series, 40 per cent of patients with tumors having basaloid foci were living and well at five years, compared with 27 per cent of patients with tumors that did not have basaloid characteristic.

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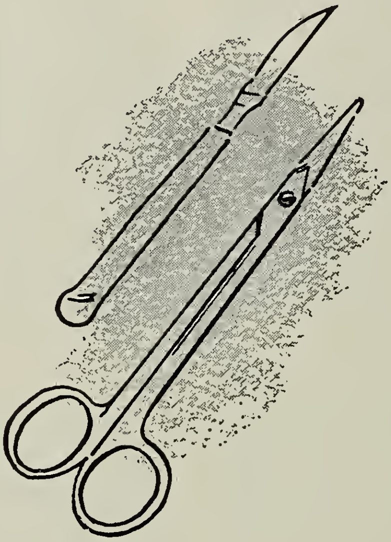

Ovarian Hyperemia Pregnancy Test

PHILIP M. SAVAGE, JR., *M.D.*, and GLORIA VALERIO, *M.T.*, San Bernardino

• In 310 cases in which a pregnancy test was carried out by injecting serum from the woman into immature female rats and observing the ovaries at autopsy 18 hours later, there were no false positive reactions. Results in three instances were false negative and in two of the three a positive reaction was obtained upon repeat of the test two weeks later.

The advantages of using serum for the test are believed to outweigh the convenience of obtaining urine specimens.

THE FIRST ACCURATE DIAGNOSTIC test for pregnancy was outlined in 1928 by Aschheim and Zondek[1] after they demonstrated the presence of a gonad-stimulating substance in the blood and urine of pregnant women. The Aschheim-Zondek test is based on the fact that this gonad-stimulating substance (which we now know is chorionic gonadotropin) when injected subcutaneously into immature female mice, produces hemorrhagic follicles in the ovaries.

Since the original meritorious work of Aschheim and Zondek, the hormonal test for the diagnosis of pregnancy has become one of the most talked about subjects in medical journals. Most of the earlier reports were corroborations of the value of the test. However, since the Aschheim-Zondek technique requires the use of five mice and takes 96 hours, many investigators began to modify the original test to make it more adaptable to routine clinical use.

Most workers in the field have elected to use immature rats instead of mice. The first successful pregnancy test in which rats were used and results were known in 24 hours was reported by Kelso[4] in 1940. In 1941 Frank and coworkers[3] shortened the procedure to from 8 to 24 hours. The following year Salmon and his coworkers[6] reported a six-hour ovarian hyperemia pregnancy test, and in 1943 Kupperman and his associates[5] suggested that the end-point of the test be shortened to two hours.

On the other hand, investigations by Bunde[2] and by Zondek and Sulman[7] in 1947 demonstrated that shortening the time of the test to less than 24 hours renders it less reliable.

The ovarian hyperemia pregnancy test has been used at the laboratory of the San Bernardino Medical Group since August 1957.

The method employed uses two immature female rats, Wistar strain, age 22 to 30 days, optimum weight 40 to 60 grams. Each rat receives a subcutaneous injection of 1 cc. of serum from the woman being tested. A second injection of 1 cc. of serum is administered after a time lapse of four hours.

Autopsy is performed the following day (approximately 18 hours after the first injection). The animals are killed by chloroform asphyxiation, and the abdomen is opened to expose the ovaries, which are examined immediately. If the ovaries are grossly enlarged and hyperemic, with small hemorrhages visible on the surface, the result is positive for pregnancy; if the ovaries are small, pale and cream-colored (occasionally faintly pink) the result is negative.

If a physician requests a report sooner than 18 hours, autopsy is done at six to eight hours after the first injection. In this case, two additional rats are injected, making a total of four rats used for the test. If the hyperemic end-point is observed at the earlier autopsy, the test is reported as positive. A negative result at six to eight hours is not considered conclusive, and the final result of the test is not reported until the autopsy is done on the alternate pair of rats the following day. It has seemed to us, from both the clinical and psychological aspects, that the greatest possible accuracy is more important than speed. For this reason, we prefer the 18-hour test.

RESULTS

A statistical evaluation has been made from data on the first 315 ovarian hyperemia pregnancy tests carried out at the San Bernardino Medical Group.

The clinical course of the patient was followed closely in 310 of these cases; in five cases the clinical outcome is not known.

Of the 310 specimens in cases in which the clinical data are whole, 170 were obtained from women in whom pregnancy was subsequently verified clinically and 140 were from women who were not pregnant.

There was no instance of a false positive reaction. In three instances the reaction was not positive although the woman was pregnant. Two weeks after the first test a second one was done in two cases and the results then were positive. In the remaining case retesting was not carried out.

Submitted August 30, 1962.

DISCUSSION

Although the majority of laboratories performing this test use urine as the material to be injected (voiding being easier than the venipuncture necessary for obtaining serum) we prefer to use serum in our laboratory. Unextracted urine is frequently toxic, as it may be when the patient is bleeding, has cystitis or has been taking various drugs. Also, if the patient has polyuria, even a first morning urine specimen may be very dilute, which would necessitate concentrating the specimen.

Since the definite end-point of the test consists of hyperemia of the ovaries, it is imperative that the ovaries be examined immediately after death. In performing the autopsy, it is necessary to avoid penetrating vital organs or injuring vessels in the abdominal wall, since blood in the abdominal cavity makes it difficult to detect the ovarian hyperemia.

Anyone planning to use this test should become familiar with the normal gross appearance of the ovaries of immature rats in order that accurate readings be made. It is advisable to start with a series of serum specimens from women known to be pregnant and to contrast the ovarian reactions induced by these specimens with the condition of the ovaries of rats injected with serum from women known not to be pregnant. Also, until one becomes adept in reading the tests, a control animal, preferably a litter mate, should be killed simultaneously for comparison with the injected rats.

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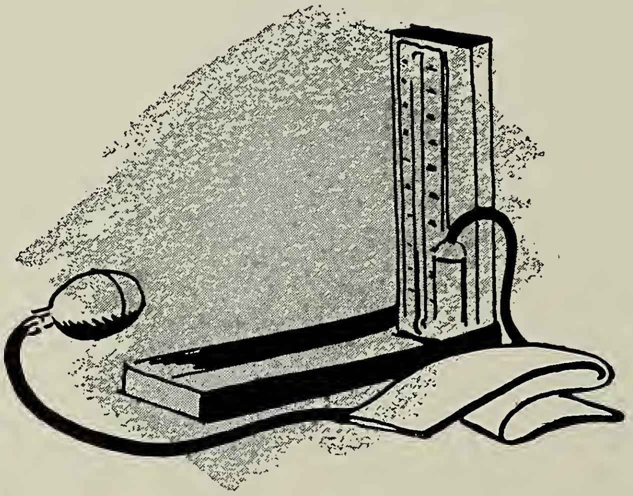

Mycosis Fungoides

Local Injection of Triamcinolone

WILLARD L. MARMELZAT, *M.D.*, Beverly Hills

• Three patients with mycosis fungoides in the thickened plaque and early tumor stages of the disease were treated with intralesional injections of triamcinolone solution. Both triamcinolone diacetate and acetonide in concentrations of 0.75 per cent or higher were effective in reducing the tumors and symptomatically controlling the pruritus. Other parts of the same lesions treated with other substances or not treated remained unchanged.

MYCOSIS FUNGOIDES is a chronic disease which runs an unpredictable and variable course, interrupted by some remissions, to a fatal termination. It holds a distinctive place among the lymphoma group of diseases in that it originates in the skin and usually terminates as a skin disease, invasion of the lymph nodes and visceral organs occurring in only a small proportion of cases.

It is unlike the rest of the lymphoma group in that the clinical picture evolves usually, but not always, in definite stages. Each stage has distinctive lesions. The course may generally be divided into the following: (1) *Generalized pruritus;* (2) *Premycotic or prefungoid stage* characterized by erythematous, eczematous, psoriasiform or papapsoriasiform dermatoses; (3) *plaque stage,* in which some plaques become quite infiltrated; (4) *tumor stage,* with round or lobulated bluish to reddish-brown tumors, some of which fungate. The first two stages may persist for years before the next stage begins. The first three stages may be microscopically nonspecific; in the fourth stage definite histopathologic diagnostic interpretation is possible.

The course of the disease usually proceeds in order, but the first two stages, and rarely the first three, may be omitted. The onset of infiltrated plaques and tumors generally indicates an advanced malignant process with vigorous treatment indicated. Pruritus is invariably severe in all stages. Therapy poses a problem in all stages and usually requires the combined services of a dermatologist, internist and radiologist.

The purpose of this paper is to offer an additional simple therapeutic technique for use in the infiltrated plaque and early tumor stages.

CASE 1. A sixty-two-year-old man noted itching of the lower extremities and trunk in 1959. A physician treated him with topical applications, which gave temporary relief. For the next two years the patient had generalized pruritus and areas of dry "eczema" with period of partial remission. In January 1961 eight intensely pruritic violet-red plaques 4 to 10 centimeters in diameter appeared, predominantly on the abdominal wall, but one each on the forehead and the left thigh.

When I first saw this patient in May 1961, biopsy specimens from the lesions were morphologically characteristic of mycosis fungoides. Histopathologic sections revealed the presence of a diffuse band-like infiltrate in the upper cutis. This infiltrate was composed of polymorphonuclear cells, eosinophiles, plasma cells and mononucleated cells hugging the epidermo-dermal junction.

Three large lesions were treated by various methods, with controls provided, the better to appraise results. The lesions were divided into five areas, each about 4 cm. in diameter. Parts of the area of the lesions were treated by injection of active agents, parts by application of an ointment and parts were left untreated. Using a 25 gauge needle ⅜ inch long and a tuberculin syringe with a Luer-lock attachment, injection was done with application of firm pressure to overcome tumor tissue resistance. The materials were injected into the mid and deep cutis and adjacent subcutaneous tissue until a puckering effect of the overlying epidermis was seen. An attempt was made to keep the solution within the lesion. One of the five areas was treated by the injection of 1 per cent triamcinolone acetonide (10 mg. per 100 cc.), one by injection of 2.5 per cent triamcinolone diacetate (25 mg. per 100 cc.), one by injection of normal saline solution, one by local application of triamcinolone cream (acetonide) and one was left untreated.

In the ensuing five days dramatic improvement was noted in the areas injected with the triamcinolone diacetate and acetonide solutions. Clinically, there was less induration and a flattening down of the lesions. The areas treated with triamcinolone

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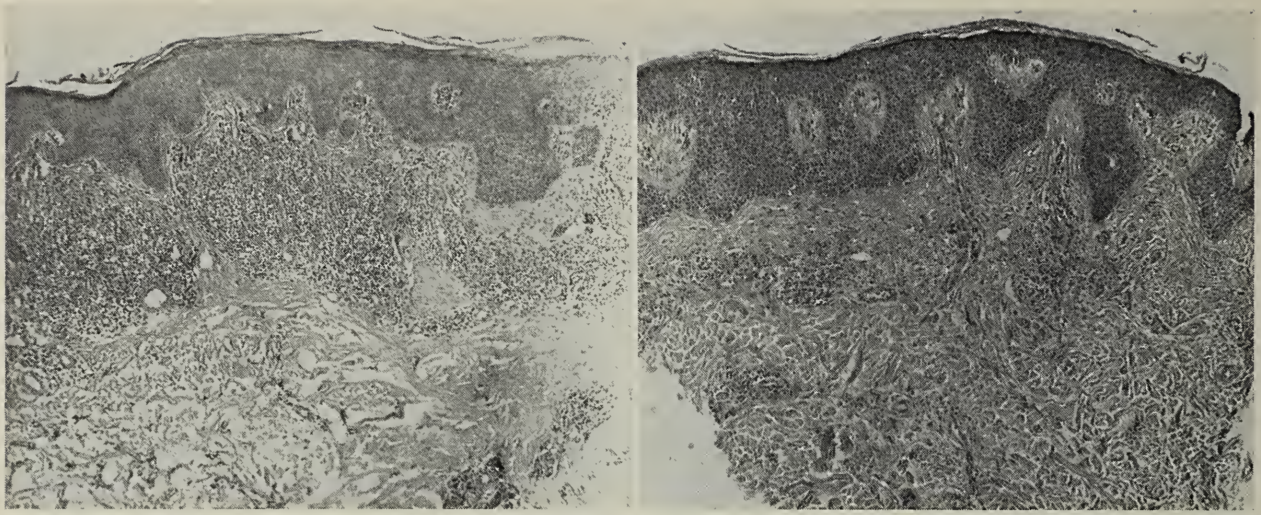

Figure 1.—(Case 1) *Left*, photomicrograph (×40) of specimen of mycosis fungoides lesion before injection with triamcinolone solution. *Right*, photomicrograph (×50) of specimen from lesion ten days after injection of 1 per cent triamcinolone.

cream and saline solution injection and the area left untreated appeared essentially unchanged. Ten days after treatment biopsy specimens from the areas showed almost complete local diminution of the polymorphous inflammatory infiltrate in the areas injected with triamcinolone. No significant difference was noted between the acetonide-treated and the acetate-treated areas. The overlying epidermis was less spongioid. The other three areas appeared histologically the same as before treatment.

The patient had pronounced relief of pruritus in the treated areas, and at his request all the tumor areas were treated. Triamcinolone in varying dilutions—2.5 per cent, 1.5 per cent, 1 per cent, 0.75 per cent, 0.5 per cent, 0.25 per cent—was used, with 1 per cent xylocaine hydrochloride or normal saline to dilute the commercial preparation. The lesions were treated at staggered intervals and the total amount of injected triamcinolone was kept low so as to ensure that the observed beneficial effect was a local one and not the result of systemic absorption. All the plaque and tumor areas rapidly flattened and pruritus disappeared. The response to the weaker solutions was somewhat less than to the stronger ones, but reinjection was done with satisfactory resolution. Other than the macular nonindurated violaceous flush which marked the mycosis fungoides tumor site, no local signs of the disease remained. In July 1961 one small pruritic lesion reappeared at a site which had been treated with 0.25 per cent solution. It responded to injection with 1 per cent triamcinolone.

In August 1961 the patient contracted an upper respiratory disease and died. Autopsy revealed no evidence of mycosis fungoides of the skin, lymph nodes or viscera. A leukemoid blood reaction, and other pathological features unrelated to a lymphomatous process, were noted.

Case 2. The patient, a 63-year-old white man, has been under my observation for five years. In 1957 he noticed erythematous scaling areas over the face and trunk, with pronounced pruritus. He had had previous eczematoid eruptions and itching. A course of partial remissions and exacerbations ensued through 1958, 1959 and 1960. The dermal lesions were bizarre, having a peculiar asteatotic scaling and wrinkling in diffusely involved areas, with sharp margination. The skin adjoining the lesions was clear and of excellent texture. Biopsy of specimens was carried out in 1958, 1959 and 1960 but the morphologic features were only those of chronic dermatitis. The provisional diagnosis remained premycosis fungoides or prelymphoblastoma. As the pruritus finally became incapacitating, steroids were administered systemically, very large doses being required to control the condition. The general constitutional health and hemogram remained normal. The expected side effects of high dosage glucocorticoid therapy occurred—weight gain due to salt retention, moon facies and muscle weakness of the lower extremities.

In May 1961, while the patient was receiving large oral dosages of triamcinolone, a reddish-brown, very indurated group of nodules developed on the lateral aspect of the upper right thigh. An area 10 by 28 centimeters was involved and itching was severe. Biopsy was done and a definite diagnosis of mycosis fungoides established. The area was divided into five sections and treatment was carried out as in Case 1, with similar controls except that this time in one area triamcinolone ointment instead of cream was used. In the triamcinolone injected areas the lesions melted away within seven days, only a slight erythematous flush remaining. The areas treated by inunction and by injection of sterile saline solution appeared unchanged, as did the area which was not treated. Biopsy two weeks later revealed a decided reduction in the polymorphous infiltrate. There remained but a mild round-celled infiltrate, surrounding the superficial capillaries of the upper dermis (a reversion to the identical histopathologic picture of the years preceding the development of mycosis fungoides).

Following this the entire site of the mycosis fungoides nodules was injected, nodule by nodule, with varying dilutions of triamcinolone. Response was excellent, the entire affected area becoming almost indistinguishable from the surrounding skin. Pruritus disappeared in this area. Systemic steroids were continued throughout in the same dosage.

In January 1962 a lesion 2 by 3 cm. developed in the area that had been treated with the 0.5 per cent dilution. It was confirmed as mycosis fungoides by biopsy. Upon reinjection with 1 per cent triamcinolone it promptly abated.

CASE 3. A 59-year-old white woman had had generalized pruritus for several years, a non-specific rash appearing intermittently on the face and trunk. Approximately a year before the time of this report pruritic nodules developed over the abdomen and extremities. Topical therapy did not reduce them. Biopsy established the diagnosis of mycosis fungoides. Various lesions were divided into five equal portions as in the previous cases. Triamcinolone diacetate and acetonide were injected subcutaneously into respective fifths of the tumors. Complete resolution of the steroid injected lesions occurred in ten days. Thereupon all lesions were injected with triamcinolone. In a year of observation afterward there was no recurrence of mycosis fungoides. No other treatment was given. It was expected, however, that in time there would be a relapse of the injected lesions.

DISCUSSION

Many kinds of therapy have been advocated for the management of mycosis fungoides. Any physician who has cared for patients with this lymphomatous disease is only too acutely aware of the temporary nature of the therapeutic benefits to be obtained from roentgenotherapy and radiomimetic drugs. Frequently severe complications arise during their use. When relapses occur, as they invariably do, the disease is often more distressing and aggravated than it was before the use of radiation or radiomimetic drugs. Eventually the disease becomes resistant to both these modalities. It is wise, therefore, to save the patient's systemic and skin tolerance to x-ray and such drugs as nitrogen mustard (mechlorethamine), triethylene melamine and urethane cyclophosphamide (Cytoxan®) until their use in the latter stages of the disease is mandatory.

In recent years electron beam therapy has been advocated by Hare and Fromer and their coworkers[2] and Farber and his associates[1] for the early stages of mycosis fungoides before the tumor stage. As the effective depth dose at which the electrons of 2 million electron volts work is 6 mm. (at 1 cm. the depth dose is less than 10 per cent of the surface dose) obviously very thick plaques or tumors of mycosis fungoides cannot be effectively treated by this modality. There is also the practical problem that it is available in only a few medical centers.

In 1953 Goldman and Saenger[3] investigated in one case the combined use of topical application of radioisotope Sr^{90} and local injection of 17-hydroxycorticosterone. In 1955 Heisel and Fox[5] reported the use of injection of fluorohydrocortisone in one case of mycosis fungoides. They felt a temporary decrease in mycosis fungoides nodules could be seen when the injection technique was used. So far as I could determine, these reports were the only previous mention in the literature of the local injection of a glucocorticoid substance in this disease.

More recently Haserick and his coworkers[4] have given preliminary reports on the topical use of nitrogen mustard in the tumor stage of mycosis fungoides and Vineyard and Mitchell[6] on the use of topical cyclophosphamide. My preliminary work with the topical use of these drugs in mycosis fungoides leads me to feel the results are no better and possibly less satisfactory than injection of intralesional and sublesional triamcinolone.

No difference could be determined either clinically or histopathologically between the beneficial results where the triamcinolone diacetate or acetonide were used. The small areas of recurrent lesions after 6 to 7 months were those in which 0.25 per cent and 0.5 per cent triamcinolone were used.

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Renovascular Hypertension

A Review

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• Recognition of renal artery occlusion as a cause for hypertension is resulting in a systematic search for the patient with a potentially curable vascular lesion. Radioisotope renography, differential renal function studies and renal arteriography serve as screening studies to aid in the diagnostic evaluation. Vascular reconstructive operation was employed in 13 patients.

In the 30 years since Goldblatt experimentally demonstrated that hypertension is related to renal disease, exhaustive studies have been carried out to elucidate the cause and, hence, the management of hypertension.[4,6] During the past several years dynamic advancements in vascular reconstructive surgery have been focused on the definitive reversal of renal ischemia and, with it in some instances, cure of hypertension.[5] The purpose of this report is to emphasize the necessity of an orderly search for a surgically correctable vascular lesion in the diagnostic evaluation of the hypertensive patient.

MECHANISM

The complexity of the problem is attested by the multiplicity of controversial reports, both of experimental and clinical observations, dealing with physiologic studies influential in the causation of hypertension.[6]

In implicating the renal artery as the culprit in an increasing proportion of patients with hypertension, alteration in pulsatile blood flow reaching the kidney affords one explanation. Partial occlusion of one or both renal arteries, reducing the blood flow, brings about a change in the pulse pressure wave within the arterial system of the kidney. The initial intrarenal response occurs within the afferent arterioles with the release of the proteolytic enzyme *renin* from the juxtaglomerular apparatus into the systemic circulation by way of the renal vein. A protein substrate produced by the liver is acted upon by renin with resultant formation of the decapeptide *angiotensin.* A converting enzyme from the plasma acts on the decapeptide, splits off histadyl leucine and produces an octopeptide. Hypertension is brought about by direct action of the octopeptide on smooth muscle of the smaller arteries.

CLINICAL DATA

The key to diagnosis of hypertension due to renal artery occlusion is the cognizance that approximately 5 per cent of unselected patients with hypertension have some degree of occlusive vascular change in one or both renal arteries. This incidence is considerably higher than any or, for that matter, all of the other conditions causing hypertension that are amenable to surgical operation such as Cushing's disease, pheochromocytoma, primary aldosteronism and unilateral atrophic pyelonephritis. Search for the latter conditions is a standard part of the diagnostic procedure in the medical evaluation in a hypertensive patient.

Historically, the onset of hypertension below age 30, particularly in women, or after the age of 50 in either sex, will help categorize more than half of the patients with surgically remedial hypertension. If the history of hypertension is atypical or if the existing hypertension abruptly becomes worse, hemodynamic alteration within the kidney may have occurred. Recent unilateral flank pain may occur as the result of renal parenchymal infarction.

On examination, evidence of premature "aging" can be a reflection of atheromatous change systemically throughout the arterial vasculature. Atheromatous occlusive vascular changes of the cerebral or peripheral arteries may be manifested by reduction of the palpable pulsation or the presence of a thrill or bruit. Sclerotic retinal arteries, clouded optic discs or scattered retinal hemorrhages and exudates are gauges of the magnitude of the hypertensive process. The presence of associated vascular disease, particularly in the aorta as judged by aortic enlargement on palpation or the presence of abdominal or flank bruit, can be the first tangible evidence of alteration in vascular flow.

It is presently not possible, on the basis of blood pressure findings alone, to categorically separate patients with renal artery occlusion from the large

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group of patients with essential hypertension. Suffice it to say that the patient with diastolic blood pressure sustained above 110 mm. of mercury should have additional screening studies beyond the currently accepted testing included in the standard medical evaluation. Maintenance of a diastolic blood pressure below the arbitrarily selected 110 mm. of mercury does not in any way exclude a patient from occlusive disease of the renal artery. However, the presence of potentially curable renovascular lesions is considerably higher in the group with diastolic blood pressures maintained above 100 mm. of mercury. Among the usual laboratory findings is proteinuria or mild hematuria. Mild azotemia may exist. Creatinine clearance and PSP excretion both may be reduced. Recently attention has been directed to elevated aldosterone excretion in the urine in the presence of renal artery occlusive vascular disease.

An intravenous urogram may provide the first clue implicating the kidney in causing the hypertension. An unexplained difference of 1.5 cm. or more in the size of one kidney or disparity in function may be the first clue. Calcification in the aorta near the renal arteries is perhaps best judged by reviewing the lateral film of the lumbosacral spine.

The reduction in renal mass that may occur as a result of renal artery occlusion can be shown by retrograde pyelography. The presence of calyceal and parenchymal changes in the intravenous and retrograde pyelograms of pyelonephritis is noted in the great majority of patients over 50 years of age who have occlusive vascular disease. What the relationship is between the radiographic changes usually attributed to pyelonephritis and those occurring with renal artery occlusion is not known.

RADIOISOTOPE RENOGRAM

The use of the radioisotope renogram as a screening test in suspected cases of renal artery occlusion is rapidly assuming a place in the evaluation of hypertension.[7] The test is safe, easy, inexpensive and not uncomfortable for the patient. The major disadvantage of this procedure is that it is diagnostically accurate in only about 75 per cent of cases. A primary renal parenchymal disorder may cause renographic changes similar to those associated with renal artery occlusion.

Interpretation of the radioisotope renogram includes the evaluation of the initial rise in radioactivity following the injection of hippuran I^{131} (vascular phase) followed by the slower parenchymal phase, both of which occur within the first few minutes after injection in a normal patient. The index of evacuation is measured at 10, 20 and 30 minutes. In renal artery occlusive disease the affected kidney retains radioactivity as judged by a delay in the evacuation index at 20 and 30 minutes.

SEPARATED RENAL CLEARANCE STUDIES

The disparity of results of separated renal function studies as reported by different investigators has raised doubts as to the effectiveness of such studies as a screening test for patients with renal artery occlusive vascular disease.[1,3] Inconsistency of results of quantitative evaluation of salt and water excretion from each kidney has caused some observers to abandon this procedure.

Sound physiologic principles govern the quantitative comparison of glomerular filtration, renal blood flow, urine volume excretion and, to a lesser degree, sodium chloride excretion. If the renal blood flow is reduced by 40 per cent, the glomerular filtration rate will decrease by approximately 40 per cent. With the patient primed with para-amino hippuric acid (PAH) plasma flow can be effectively measured. The normal renal plasma flow of 700 cc. per minute will result in glomerular filtration approximating 120 cc. per minute. Similarly, the glomerular filtration rate is most accurately measured by using inulin. The substitution of creatinine clearance to measure glomerular filtration is more practically adaptable to most hospital laboratories, however. Within the proximal convoluted tubules, approximately four-fifths of the glomerular filtrate is absorbed. The remainder of the water absorption occurs in the distal convoluted tubules. The end result of renal blood flow approximating 1,300 cc. per minute through normal kidneys is the excretion of less than 1 cc. of urine per minute.

Among the many factors influencing renal function is the increased tubular reabsorptive capacity occasioned by dehydration. The key to quantitative urine volume excretion is the excessive water absorption which will occur within the tubules, particularly the proximal portion, in the presence of renal artery occlusion. Generally this is not the case in other primary renal conditions. For accuracy in evaluation of this function, it is important that the patient be well hydrated at the time of examination.

The principal merit of separated renal function studies is the quantitative comparison of the functional capacity of each kidney. Thus this procedure is primarily for patients with unilateral renal artery occlusive vascular disease. Its diagnostic merit is reduced considerably when bilateral renal artery occlusion is present.

For satisfactory testing it is necessary that the patient be well hydrated at the time of the examination; he should be given fluid by mouth and intravenously during the hour before his arrival in the cystoscopy unit. A priming solution infused intravenously consists of 5 mg. of creatinine and 800 mg. of PAH diluted to 250 cc. with 0.45 normal saline solution. The priming solution is begun on the patient's arrival into the cystoscopy unit and is infused over a 20-minute period. During infusion of the priming solution, ureteral catheters are passed, their tips resting just below the ureteropelvic junction. A catheter is also placed in the bladder to signal any leakage that may occur.

A sustaining solution containing 50 mg. of creatinine and 2 gm. of PAH diluted to 1,000 cc. with 0.45 normal saline solution is started, with the catheters in position on completion of the priming solution, at a rate of infusion of approximately 12 cc. per minute. Separated ureteral urine volume specimens are collected at 20-minute intervals over a 1-hour period for chemical determination.

Data available for interpretation are three recordings from each kidney during the one hour, measuring renal blood flow (PAH), glomerular filtration (creatinine), water volume and sodium chloride excretion.

Variation in results in patients with renal artery occlusion vascular disease can most generally be related to faulty technical performance of the test. Included among the pitfalls of this physiologic determination of individual kidney function are the failure of proper hydration, faulty placement of the ureteral catheters in such a way as to permit leakage, traumatic bleeding, or catheter tip placement within a superior calyx.

RENAL ARTERIOGRAPHY

Short of operation, the single most reliable method of diagnosing vascular abnormality as a cause of hypertension is renal arteriography. The accuracy of properly executed renal arteriography in illustrating visually an arterial abnormality exceeds 90 per cent. With present day refinements in technique and contrast media, the safety of the procedure can best be summed up in the recent observation of De Bakey and his group who, with their most recent experience of over twenty-five hundred consecutive aortograms, experienced no mortality and no serious complications from the procedure.[2] There is no question that the potential benefit of cure of hypertension in the patient with renal vascular anomaly far exceeds the morbidity from arteriography as it is employed today.

The methods employed for renal arteriography are two. The direct percutaneous translumbar aortic puncture above the renal arteries is the simpler and is preferred if there is any indication of aorto-iliac-femoral artery disease. The other, the percutaneous transfemoral retrograde method with catheter placement at the level of the renal artery, permits the introduction of a small bolus of contrast media directly into one or both renal arteries. A volume of 20 cc. of 50 per cent Hypaque is injected, manually in the translumbar technique or with an automatic pressure injector when the catheter technique is used. The patient is heavily sedated and local anesthesia supplements the sedation. The patient is positioned over a rapid cassette changer and serial x-ray exposures are made at 0.75 second intervals.

Accurate interpretation of the arteriogram requires visualization of the entire renal arterial vasculature from the aorta into the renal parenchyma. Each of the five segments of the kidney is supplied by a major renal arterial branch. Generally, each of these five branches arises from a single artery. In nearly one third of patients, however, one or more arterial branches arise directly from the aorta to supply the renal parenchyma, viz., "aberrant" renal arteries.

It has been observed that when an "aberrant" renal artery is present (usually supplying one of the inferior renal segments), the corresponding renal artery segmental branch is absent from the "main" renal artery. Further studies are in progress to evaluate anatomically the status of the so-called "aberrant" renal artery as truly a renal segmental arterial branch.

The most common anomaly noted on the renal arteriogram is the presence of atheromatous plaque formation segmentally producing renal artery stenosis, usually in the proximal third of the renal artery. Bilateral involvement occurs in nearly one third of the patients with this abnormality, although significant narrowing of the artery may not be present in all the patients with bilateral involvement. Associated atheromatous vascular changes occur in the aorta or the iliac or femoral arteries in approximately one third of patients with occlusion of the renal artery. Renal artery occlusion may also occur as a result of disease within the aorta due to aneurysm or plaque formation. Usually confined to younger women is occlusive change in the midportion of the renal artery due to fibrous proliferation of the media. Aneurysm formation of the renal artery or one of its primary segmental branches is a less frequent anomaly. Atheromatous plaque formation within the segmental renal artery branch arising from the main renal artery or from an ectopic renal artery arising from the aorta is an occasional finding that requires further investigation with regard to its role in the production of hypertension.

TABLE 1.—*Vascular Reconstructive Techniques Used in 13 Cases.*

	No. Patients
Resection of diseased segment with end-to-end anastomosis	1
Division of renal artery distal to obstruction and reimplantation into aorta	1
Thromboendarterectomy of renal artery and use of patch graft (Teflon®)	5
Resection of aneurysm of aorta with graft replacement and suture of renal artery into graft	3
Aortic-renal by-pass graft	3

TABLE 2.—*Results Obtained by Vascular Reconstructive Operations (As Observed 9 Months to 4 Years After Operation).*

	No. Patients
Hypertension apparently cured	7
Hypertension significantly improved	2
Hypertension not significantly improved	2
Hypertension progressive	1
Died*	1
	13

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*Of cerebral vascular accident three days after operation.

VASCULAR RECONSTRUCTIVE OPERATIONS

For surgical reconstruction, moderate hypothermia (28.5-30.0° C.) is employed when complete occlusion of one or both renal arteries to partially ischemic or extensively damaged kidneys is anticipated. The definitive surgical approach to the patient with suspected renal artery occlusion is an extended midline incision with reflection of the colon, permitting access to the aorta, to both renal arteries and to both kidneys. Visual and manual examination of the aorta and iliac arteries as well as both renal arteries is performed. The presence of associated vascular abnormalities in the aorta or iliac vessels is noted.

Using a twin strain gauge with a pressure recording apparatus, simultaneous pressures within the aorta and each renal artery are performed to quantitate the intra-arterial pressure gradient through the occlusion. Pressure variations have ranged from 15 to 90 mm. of mercury with incomplete occlusion.

Biopsy specimens are taken from the inferior pole of each kidney for frozen section examination. In unilateral ischemia the frozen section pattern is striking, the ischematic changes being noted on the affected side. Both kidneys generally reveal a pattern of nephrosclerosis or pyelonephritis or both. The notable exception to this is in the younger age group with fibrous proliferation of the media as the primary cause of hypertension.

Vascular reconstructive techniques employed in this group of patients are outlined in Table 1. Generally, the use of thromboendarterectomy of the renal artery is employed for the lesion localized to the proximal third of the renal artery. A small patch graft angioplasty is used following thromboendarterectomy. The use of aortic-renal prosthetic bypass graft is preferred for more extensive change of the renal artery particularly extending into the middle or distal portions. In the presence of an aortic aneurysm involving the renal artery or of an ectopic branch ("aberrant" renal artery), reimplantation of the renal vessel into the prosthetic graft will precede restoration of aortic continuity after resection of the aneurysm.

The results of vascular reconstructive operation on 13 patients with minimum follow-up period of six months are shown in Table 2. It is generally recognized that hypertension attending a major surgical procedure often will be temporarily improved because of the restrictions placed on the patient incumbent on the surgical procedure. For this reason a maximum period of six months must elapse after operation before any quantitative estimate of improvement can be given. This permits recovery from the surgical procedure and restoration to usual activity. On the other hand, one patient in this group had gradual improvement of hypertension with return to a normo-tensive state eleven months after operation. In six of the seven patients in whom the hypertension apparently was cured, the results were dramatic, with normo-tensive states occurring during the postoperative convalescent period and persisting.

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Toxoplasmosis

The Protean Manifestations of the Condition and Their Significance in Pregnancy and in Newborn Infants

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• Toxoplasmosis is a relatively common and generally mild parasitic infection which can, however, produce fatal and crippling complications under certain conditions — particularly when a human fetus or a newborn infant is infected. In this instance, the infection is the result of a spread of the acquired disease which may occur in the mother in the last six months of pregnancy. Although the infection of adults can be dangerous and fatalities have been reported, the danger to the nervous system, eyes and other structures of the newborn infant can be devastating—blindness, brain damage and mental deficiency, particularly as the result of an obstruction to the flow of circulating cerebrospinal fluid within the brain.

This report covers a number of differing features of the disease which have been described separately by other authors in specialty journals and in the foreign literature. If present, these signs should suggest toxoplasmosis, particularly in pregnancy, in the newborn infant and in stillborn infants.

Early diagnosis is of paramount interest in view of the poor response which may be obtained in the treatment of subacute and chronic phases of the illness. Difficulties in diagnosis stem from the manifestations of toxoplasmosis which closely resemble the symptoms of other infectious diseases.

The clinical laboratory diagnosis is made by the isolation of the organism or by the demonstration of immune protein in the patient's serum.

THE FIRST DOCUMENTED INFECTION of the human being by toxoplasmosis was reported by Janku,[11] an ophthalmologist in Prague, who described a cystic structure in sections of an eye of a patient suffering from choroiditis. The initial description of a neonatal disease caused by Toxoplasma gondii is found in a report made in 1939 by Wolf, Cowan and Page.[19] This report aroused considerable interest in toxoplasmosis throughout the world. Serologic tests with a high degree of specificity were subsequently devised as an aid in the diagnosis of toxoplasmosis. Following the description of the Sabin-Feldman dye test, a number of interesting facets of toxoplasmosis were reported and subsequently comprehensively reviewed by Feldman.[5] Feldman drew attention to manifestations of toxoplasmosis which affect veterinarians, biologists, epidemiologists, parasitologists and a host of medical specialists.

The epidemiologic aspects of toxoplasmosis are being actively studied and the studies have been reported upon extensively elsewhere.[6] It is the purpose of the present report to bring together basic information concerned with toxoplasmosis as it has been described in newborn infants and in obstetrical patients. The recommendations of various authorities concerning the available laboratory procedures will be reviewed.

Toxoplasmosis during pregnancy represents a grave threat to the life and health of the unborn child, particularly in the second and third trimesters of pregnancy. In a recent review of case studies in France, toxoplasmosis was found to be more frequently encountered than congenital syphilis.[13] Physicians should therefore include toxoplasmosis in their differential diagnosis of febrile conditions encountered during pregnancy. Active therapy should be considered in the acute phase of the illness. In view of the crippling and lethal effects of toxoplasms on the fetus, every obstetrician should be alert for signs and symptoms which might suggest toxoplasmosis. Since the incidence of acquired toxoplasmosis increases sharply in early adulthood, there is a higher incidence of toxoplasmosis in young mothers. Some evidence suggests that toxoplasmosis contributes substantially to the incidence of stillborn infants.[9]

Toxoplasmosis infections have been demonstrated in a host of animals and birds. Active infection has been noted in dogs, cats, rabbits, rats, guinea pigs, chinchillas, swine, sheep, cattle, squirrels, mink and other primates. The source of the organism and the precise mechanism of transmission in the acquired infection is not fully understood. Various lines of evidence suggest the infection of humans following the onset of toxoplasmosis in domesticated animals.

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Jacobs[10] described the possibilities of infection from the ingestion of uncooked meat, particularly pork. He suggested that in the light of present knowledge uncooked meat should be avoided during pregnancy. Since Seventh Day Adventists have comparable rates of infection, other animal foods such as milk and eggs may transmit the disease.

Serologic studies indicate a rising incidence of toxoplasmosis in older persons. Hence the disease is difficult to diagnose by serologic methods only. In some geographic areas, particularly in the warmer climates, there is a very high incidence of toxoplasmosis. On the other hand, excessive perinatal mortality in a small town in England was shown to be associated with serologic evidence of toxoplasmosis.[18] Positive reaction to tests was reported in a high proportion of children under nine years of age in the Washington, D. C., Negro population.

PATHOGENESIS OF HUMAN TOXOPLASMOSIS

Feldman[5] classified toxoplasmosis with congenital and acquired categories. The acquired disease includes encephalitis, systemic disease, uveitis and inapparent infections.

An analysis of the pattern of infection in the congenital and acquired forms of toxoplasmosis explains the protean manifestations of the disease. The various stages of infection were recently reviewed in considerable detail by Remington.[17] The organisms proliferate at the site of entry. They are then widely disseminated throughout the body, entering certain cells and then proliferating within the cells. The infected cells become distended by the proliferating organisms. Lysis of infected cells then occurs and the cycle is repeated. The parasitemia occurs during the acute stage of the illness and may last for several weeks, depending upon host factors.

The subacute infection has been studied in laboratory animals and, under experimental conditions, the parasites in the blood and various tissues, other than the nervous system, gradually disappear following the acute phase. The results of experimental work with animals are not always applicable to human infections. In the experimental animal, viable toxoplasma may persist for extended periods. Persistence of the organism in nervous tissues may be related to failure of antibody to penetrate blood-brain barriers or blood-ocular barriers. Microscopic cysts develop which enclose the unicellular proliferative form of Toxoplasma gondii. The relationship of cysts to the pathogenesis of the various forms of toxoplasmosis is being studied. The membrane surrounding the dormant proliferative form is resistant to antibody and acid, and thus may account for the transmission of the disease through the ingestion of infected meat.

The most common site of chronic infection is the brain.[7] Less frequently other tissues, including those involved in the acute and subacute phases of the illness, may harbor cysts.

In the acquired disease in pregnancy, during the acute phase the organism proliferates in the maternal reticulo-endothelial system. The blood-borne organism may then infect the placenta. From this focus of infection a spread to the fetus may or may not occur.

The congenital or fetal infection may be related to focal areas of Toxoplasma gondii proliferation in the placenta.[2] The proliferative form of the organism then escapes from these focal areas of infection into the fetal blood stream. Focal lesions then appear in the reticulo-endothelial system of the fetus, where further multiplication occurs.[3]

The clinical findings in the acute stage of the congenital infection include changes in the level of consciousness, vomiting, diarrhea, convulsions, jaundice, splenomegaly, hepatomegaly, fever, leukocytosis and electrocardiographic changes that may suggest myocarditis or pneumonitis. Toxoplasmosis may also simulate hemolytic disease of the newborn.[1] Hence, serologic studies for toxoplasmosis should be performed when there is no evidence of blood group incompatibility in apparent hemolytic disease. These studies should include the dye test and complement-fixation tests on both mother and infant. Hydrops fetalis, maceration and thrombocytopenia have been encountered in congenital toxoplasmosis.

Congenital toxoplasmosis is more frequently diagnosed in the subacute stage of the infection with little or no febrile element. Symptoms and signs are generally limited to the central nervous system. Hydrocephalus, chorioretinitis and cerebral calcifications may be apparent. Eighty to ninety per cent of children with congenital toxoplasmosis have evidence of chorioretinitis, which may be restricted or so extensive as to involve the entire globe with obvious microphthalmos. Extensive involvement in early infancy may result in an obvious white reflex. Later, central choroiditis may cause nystagmus. Hydrocephalus and cerebral calcifications are common.

Hydrocephalus or microcephaly may develop several weeks after birth. Less frequently, infection of the brain-stem may occur, with meningeal signs including elevation of pressure, an increase in protein and cells and xanthochromia of the cerebrospinal fluid. In 180 cases of congenital toxoplasmosis reviewed by Feldman,[6] 78 per cent of the mothers were between 18 and 29 years of age.

Generally, the ocular disease in adults is related to congenital toxoplasmosis.[14] Ocular involvement in the acute systemic infection in rare.[7] Some cases of posterior and anterior uveitis have been described as the result of the acquired infection.[3] Jacobs expressed belief that there is continued proliferation of the organism behind the blood-brain or blood-ocular barrier over a long period, and that this accounts for the chronic lesions in ocular toxoplasmosis. Repeated acute exacerbations of the eye lesions may be caused by the escape of intracellular parasites previously existing in the encysted form or dormant proliferative form.

In only 40 per cent of congenital toxoplasmic infants in one recent study was there evidence of chorioretinitis at birth.[14] At a later date 80 per cent of the surviving infants may show evidence of toxoplasmic chorioretinitis. Among clinicians, ophthalmologists have been most active in the study of toxoplasmosis. Hogan and his associates pioneered in this field and recently published studies of cyst formation in tissue cultures.[9]

The manifestations of toxoplasmosis of the acquired variety in later life are not well defined. The most common finding is generalized lymphadenopathy in the presence of a negative heterophile or Paul-Bunnell reaction.[3] Abnormal lymphocytes resembling virocytes have been described. Lymph node enlargement may be noted in a routine physical examination without clinical symptoms, or there may be considerable enlargement and also tenderness of lymph nodes with an accompanying febrile illness. The nodes may remain enlarged for some months.[3] Any illness that the mother has in pregnancy should be noted.[1] Clinical signs also may include skin rashes of the morbiliform type, unexplained fever which may persist for weeks, rhinopharyngitis,[4] evidence of hepatitis and myocarditis[15] and muscle pains.

Any patient who has the signs and symptoms of infectious mononucleosis with a negative heterophile or ox cell test should be studied to exclude toxoplasmosis. Febrile illnesses in the second or third trimesters of pregnancy that occur with a morbiliform rash should also be investigated unless there is a clear-cut etiological factor. There has been a particular prevalence of toxoplasmosis in some areas of England, the acquired disease closely resembling infectious mononucleosis. The acquired illness in adults is sometimes encountered as a severe rickettsial-like syndrome with pneumonitis, encephalomyelitis, maculopapular rash and fever.[16]

IDENTIFICATION AND ISOLATION OF TOXOPLASMA GONDII

Recognition of the proliferative form in fixed tissues is extremely difficult. Beverley[3] said that it is well nigh impossible except for the detection of intracellular collections of toxoplasma or of a pair produced by recent fission. Stained impression smears from tissues which have not been fixed are recommended from biopsy or autopsy materials for identification of the parasite. Rapid microscopic diagnosis is best accomplished by the identification of "pseudocysts" in emulsions of infected tissues or tissue sections. Emulsions are prepared before fixation of the tissue. One drop of the tissue emulsion contains the equivalent of 25 cubic mm. in microscopic sections cut at 5 mu. Tissue removed by biopsy or autopsy is minced and mixed with twice its volume of sterile saline solution before fixation. Cysts can be identified in the saline preparation.

There has been some discussion in the literature as to the nature of the cyst or pseudocyst. Generally, the encysted parasite is referred to as a pseudocyst. Frankel[7] regards the cyst wall as a product of the parasite. The organisms within the cyst wall may remain viable for long periods.

There may be as many as a hundred cysts in a single drop of brain emulsion. Toxoplasma are more apparent in small cysts. They appear curved and sausage-shaped within the cyst and generally show no evidence of motility. The toxoplasma cysts can be differentiated from pollen grains by means of a safranine stain. Suspensions from potentially infected brains may be stored at 4° C. Toxoplasma may survive for 16 days without inoculation.[1] Hence, materials may be referred to laboratories that have adequate facilities for isolation of the organisms.

Isolation of the parasite can be readily accomplished as proof of the infection. The isolation should not be attempted by personnel who have not been tested by the Sabin-Feldman dye test or skin test for some degree of immunity.[3] Fatal laboratory infections have been reported and non-fatal infections have been frequent. Any contact with the living toxoplasma must be avoided by workers who do not have demonstrable antibody.

If the laboratory facilities are such that isolation of the parasites can be safely attempted, the tissues or fluids may be inoculated intracerebrally into six to eight week old mice. Since only a 0.02 ml. of inoculum can be used in each mouse, a large number of them may be necessary to adequately sample the specimen[3] and prove the infection. Larger quantities may be administered intraperitoneally; toxoplasma of low virulence may not cause signs of illness when administered intraperitoneally.

Some toxoplasma strains are of low virulence, producing in mice only a mild illness that becomes apparent during the third week following inoculation. Other mice in the same group may be infected but remain asymptomatic. A rapidly fatal infection occurs in mice inoculated with virulent Toxoplasma gondii. Giemsa-stained or Wright-stained smears are prepared from the peritoneal and pleural fluid and from the cut surfaces of the brain, spleen, lung and liver of infected mice.

The proliferative form of the parasite has a crescentic appearance. One end is rounded. The opposite extreme is pointed. In tissue, the proliferative form may occasionally appear ovoid.[5] With Romanowski stains, the nucleus of the toxoplasma is red, the nuclear membrane is clear, the cytoplasm pale blue. As antibodies develop in the host the organism may become swollen, rounded and globular.

The parasites have been isolated from many tissues of the body in congenital toxoplasmosis, including brain, heart, skeletal muscle and other visceral tissues. Digestion techniques are used to concentrate large amounts of tissue for isolation purposes. Toxoplasma have been found in almost all cells of the mammalian and avian body. The exception is the erythrocyte.

Strains of toxoplasma may be maintained in mice by intraperitoneal or subcutaneous injections of tissue emulsions and ascitic fluid. Following the primary isolation, the mice die quickly on subsequent passages (four to six days). Hence, the virulent strains must be passed every four days.

Toxoplasma have been noted in blood smears, and structures resembling toxoplasma have been observed in bone marrow smears. Toxoplasma, however, have not been recovered from bone marrow by animal inoculation. Since the organisms are limited to foci of infection, these negative results may be due to inadequate sampling of the bone marrow. The parasites may be demonstrated in the centrifugal sediment of cerebrospinal fluid.

SEROLOGY

The Sabin-Feldman dye test is a most valuable serologic procedure. Many laboratories are able to reproduce their titers with great precision with minimal variations on repeated titers. Disadvantages of the test may be listed as follows:

1. A standard strain of toxoplasma must be maintained, with the attending dangers of frequent mouse passages.
2. Peritoneal exudate from the infected mice must be used within an hour of the time of withdrawal.
3. Normal human serum containing adequate accessory factor is difficult to obtain.
4. The immunity of all laboratory personnel must be considered.

The dye test[5] is performed by mixing fresh live parasites suspended in normal, fresh human serum with equal quantities of test serum in fourfold dilutions. The dilutions of serum and parasites are incubated and then exposed to freshly prepared alkaline methylene blue. Specific antibody plus serum activator prevents staining by methylene blue. The dilution containing 50 per cent unstained parasites represents the titer.

The dye test rapidly becomes positive and remains positive in high titer for extended periods.

The complement-fixation test remains negative longer following infection, then reaches relatively low titers of 1:8 and over. The complement-fixation test has the advantage of serologic conversion after the dye test has already become positive and is at a stable high titer. A change in the complement-fixing antibody titer or serologic conversion may indicate active or early infection.

An infant serum dye test titer equal to or higher than the maternal titer in the presence of a positive or rising complement-fixation test is consistent with congenital toxoplasmosis. Also the finding of a negative complement-fixation test (infant) combined with a dye test titer greater than the maternal titer is consistent with the disease.

In the presence of toxoplasma infections, mothers and infants have dye test titers above 1:1000. There may be an elevation in the maternal complement-fixing antibody without corresponding antibody in the infant serum.

Additional laboratory tests include the hemagglutination test which demonstrates antibodies that appear with or shortly after the Sabin-Feldman dye antibodies and which persist for the same length of time. The hemagglutination test designed by Jacobs utilizes tanned human erythrocytes sensitized with antigen prepared from Toxoplasma gondii. The skin test is of the delayed tuberculin type. It becomes positive in acquired toxoplasmosis approximately one year after the infection and remains positive for extended periods. Recently Goldman developed a fluorescent antibody technique to screen sera before doing the Sabin-Feldman dye test.[8] By the technique he devised, specific antibody inhibits fluorescence when added with labelled antiserum to dried smears of Toxoplasma gondii.

PATHOLOGY

Toxoplasma proliferate in actively growing tissues in the fetus, particularly the liver and spleen. This process may result in an illness closely simulating hemolytic diseases of the newborn. Lymph node, lung and skin involvement may be encountered, in addition to invasion of the eyes and other systems. The lesions in the lymph nodes, spleen, liver and lungs tend to be surrounded by zones of hemorrhagic infiltration.[3] Exudates of serofibrinous fluid may be present in the body cavities.

In the areas of cell lysis caused by the proliferating parasite, an intense inflammatory reaction occurs with associated necrosis. Cysts without an associated cellular reaction are commonly encountered.[3] This finding may be the result of a state of equilibrium between the host and the encysted parasite. In the brain, lung, liver and spleen, the cysts tend to be spherical. In firmer tissues, such as cardiac muscle, they may be elongated in the direction of the fibers. Encysted parasites have been described in heart, muscle, liver, lungs, spleen and other tissues. Fetal congenital toxoplasmosis is sometimes accompanied by a predominantly acute necrotizing chorioretinitis with numerous intercellular toxoplasma.

The gross lesions on the brain are noted as yellow foci of varying size which are situated deep to the pia mater.[1] The brain may show areas of calcification and dilatation of ventricles. Focal areas of necrosis may develop in the meninges and brain substance.

The subependymal tissue of the wall of the lateral ventricles is subject to extensive involvement with large areas of necrosis. This necrotic material, together with the accompanying inflammatory reaction, may block the aqueduct of Sylvius, causing internal obstructive hydrocephalus. Occasionally there is extensive loss of tissue with resulting microcephaly and non-obstructive internal hydrocephalus. In the advanced disease only a very thin rim of cortex remains.[3]

Less common sites of involvement in the brain include the basal ganglia, medulla and spinal cord. The cerebellum is rarely involved.

The lymph node changes are of a "reactive" type, without necrosis or particular pericapsular cicatrization and adherence between nodes. Robb-Smith described a reactive hyperplasia involving lymph nodes with collections of large epithelioid cells, some of which are multinucleated and have finely granular eosinophilic cytoplasm. It is likely that in the early stages of the infection many nodes will show nothing more than reactive hyperplasia.

Therapy

After confirmation of the acute infection, specific therapy may be employed as recommended elsewhere.[17]

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Itching in the Ear Canal Due to Hypocerumenosis

An Effective Method of Treatment

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• Itching of the ear canal, with oozing, edema and cracking of the skin due to absence or insufficiency of wax was treated in more than 200 cases by instructing the patient to massage the ear canal with a cotton tip applicator soaked with a hydrocortisone preparation and inserted a half to three-quarters of an inch beyond the meatus.

Some 95 per cent of patients reported good to excellent results in three to four days after the beginning of treatment. In the remainder results were fair.

ITCHING IN THE EAR CANAL with local oozing, edema and cracking of the skin that is not ascribable to either fungous or bacterial infection often is associated with a less than normal production of wax. Many methods of treatment for this distressing condition have been reported, but on the whole the results have been poor to mediocre.

The present communication is to discuss observations that may be helpful in diagnosis and to report a therapeutic regimen that relieves the itching, heals the lesions and may restore normal excretion of the lipid covering which many investigators consider a protection against infection of the skin or the canal.

The secretion covering the surface of the external canal epithelium is formed primarily by the sebaceous and apocrine glands in the outer third of the canal. The large and usually active sebaceous glands pour fatty secretions onto the surface of the skin as they do in the scalp and postauricular regions. A less viscous, chemically complex pigmented wax is produced by the apocrine glands. Oxidation, epithelial detritus, dirt and dust give the cerumen its characteristic color.

Some investigators[5] believe that this "lipid cover" acts as an important agent in preventing maceration of the skin and entrance of bacteria into the corium. Gill[1] advanced the idea that the cerumen of the ear provided an antibacterial "acid cloak" which he considered essential to the maintenance of a healthy ear. He demonstrated that the pH of the cerumen in a normal healthy ear is slightly acid, whereas in 90 per cent of the infected ears the cerumen is alkaline. Other observers[2,3,4] have expressed the opinion that the absence of cerumen in the external auditory canal predisposes the canal to infection. The relation between bacterial and external otitis is vague. Occasionally, bacteria are the direct and complete cause, and anti-bacterial therapy, as indicated by culture and sensitivity tests, effects immediate recovery. Sometimes bacteria play only a secondary role in the production or protraction of external otitis and anti-bacterial therapy produces a poor response. This may be due to the poor lipid protection of the canal.

Almost all physicians have been questioned about the plethora of wax in the ears of some people and, at the other extreme, a complete absence of the material in others. Either *asteatosis* or *hypocerumenosis* is an appropriate epithet for this latter condition. But as to the question, "Why don't I form wax in my ears?" I feel that the simplest explanation to the average patient is to draw a comparison with perspiration: Some people perspire more freely than others. This usually avoids more detailed physiological explanations.

Histologically, acerumenosis is associated with hyperkeratosis, parakeratosis, acanthosis with intercellular and intracellular edema and keratinized material in the apopilosebaceous orifices. The apocrine glands are often surrounded by an inflammatory process with an infiltration of lymphocytes and leukocytes. In general, the glands seem to be atrophic and decreased in size, their epithelium giving the appearance of not functioning. Sometimes the apocrine glands may be completely destroyed.

For some reason unexplained—except perhaps that they have read a magazine article about fungous infection or have misinterpreted a chance remark by a physician—many patients with itching and the visible symptoms of the kind described come to an otologist with a self-diagnosis of "fungous disease." Although careful differentiation is necessary, usually it is not difficult to determine that the itching is due to hypocerumenosis rather than to severe reactions to mycotic or bacterial infection, which for the most part are distinctive and readily identifiable. Sometimes, however, cultures may be necessary if doubt remains.

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Presented before the Section on Ear, Nose and Throat at the 91st Annual Session of the California Medical Association, San Francisco, April 15 to 18, 1962.

History-taking may provide clues that will help establish that the itching in a particular case is due to hypocerumenosis. A history of excessive washing of the ears—often with the deliberate aim of removing wax—or of swimming, which tends to douche the ears, or of picking at the ears with toothpicks or hairpins, can alert diagnostic suspicion. Since emotional stress is believed sometimes to play a part in asteatosis, it should be taken into consideration in taking a patient's history.

Particularly important are duration of symptoms and a history of tendency to remission and exacerbation. Along with examination of the pinna, postauricular tissue and scalp, the skin of the rest of the body should be inspected. One should look for excoriations and lichenifications—indicating the patient has been scratching—and for oozing and crusting, fissures, hyperemia or erythema. Dermatitis elsewhere and the relation of dermatitis in the ear to remission and exacerbations of dermatitis elsewhere are also important. The picture of acute eruption suggests contact dermatitis, infections, eczematoid dermatitis, or bacterial infection, psoriasis, seborrheic dermatitis and neuro-dermatitis. (It is recognized that the problem of intense itching associated with neuro-dermatitis in psychosomatic problems needs more investigation.)

Treatment

Among a variety of treatments for itching in the ear canal is the application of boric acid solution or alcohol or gentian violet with a dropper. This method, although it may dry the weeping skin, has the deplorable disadvantage that it also washes away the already depleted lipid cover. Results with the use of salicylic acid ointments, cade oil, iodine, antibiotics and acetic acid preparations and the injection of calcium gluconate intravenously and parathyroid extract hypodermically—all have been, in general, less than satisfactory.

In more than 200 cases in a period of two and a half years I prescribed a simple method of treatment which the patient may administer himself, and a high proportion of the patients had good results.

Contrary to the classic warning against inserting anything into the ear canal, I instruct the patient to soak a cotton tip applicator or Q Tip in a Cort Dome®* lotion, 0.5 per cent strength, and then to insert the tip about a half or three-quarters of an inch beyond the meatus and liberally rub the lotion into the canal walls, the meati and the concha. This shoud be done for about a minute in each canal twice daily, and the patient is told to continue the treatment for several days after all itching has subsided.

A specific warning is given not to instill the lotion into the ear, for it has been found to form an emulsion-like layer over the external surface of the ear drum, impairing the hearing.

The patient is told that the condition of the skin in his ear canal may necessitate either constant daily use or occasional periodic use of this application. After the acute exacerbation has subsided, the patient is told to resume the treatment whenever the first sensation of itching develops, the frequency being left up to him. If the condition of the ear at later reexamination indicates a superimposed infection, a similar preparation with topical neomycin (Neo-Cort-Dome® lotion) is prescribed for application in the same manner.

Results

Some 95 per cent of more than 200 patients who had hypocerumenosis with symptoms reported good to excellent results were obtained in three or four days with this treatment. Itching stopped, oozing and edema diminished and the skin began to heal. In a few cases a scant amount of cerumen eventually developed. In the remaining 5 per cent of cases the results were fair, the lesser benefit probably being attributable in some degree to chronic eczema with irreparable damage to the apocrine sebaceous glands.

526 Soquel Avenue, Santa Cruz.

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*The preparation combines hydrocortisone and an exclusive acid mantle vehicle. It is made as an ointment or a lotion with different hydrocortisone strengths—0.5, 1.0 and 2.0 per cent.

■ CLINICAL PATHOLOGICAL CONFERENCE

CEDARS OF LEBANON HOSPITAL

HOWARD OTTO, *M.D.*, Pathology, GARY FURMAN, *M.D.*, Surgery, and PAUL GELLER, *M.D.*, Medicine, Los Angeles

DR. GELLER:

Present Illness. The patient was a 48-year-old white man, an engineering executive, who had been in good health until December, 1961, when, while he was on a skiing trip, cough, chills and fever developed. He was treated with antibiotics by his physician and began feeling better, but cough and low grade fever persisted. Two months later, because of these symptoms and a weight loss of 14 pounds, he was admitted to another hospital where he was treated for pneumonitis and pleurisy with many antibiotics, including Combiotic,®* oleandomycin, erythromycin (Ilotycin®), oxytetracycline (Terramycin®) and kanamycin. X-ray films of the chest at that time showed "cannon ball lesions" in right and left lung fields. The patient was transferred to Cedars of Lebanon Hospital on April 19, 1962.

Past History. Hemorrhoids; "asthma" at age of 18; appendectomy, 1952; smoked one pack of cigarettes a day; social drinker. Father was killed in an accident. Mother died in 1921 of tuberculosis.

Physical Examination. The patient was well developed, well nourished and in no acute distress. Blood pressure was 120/90 mm. of mercury. The pulse rate was 74 and regular. There was a pingueculum of the left eye. The chest was bilaterally symmetrical with good excursions. Coarse, moist rhonchi with occasional dry expiratory wheezes were heard over both lung fields, with some clearing after cough. An area of dullness was percussed over the posterior right mid-lung field. The cardiac point of maximal impulse was in the midclavicular line at the 5th intercostal space. No murmurs were heard. A_2 and P_2 were equal and P_2 was not accentuated. Rhythm was regular sinus. The liver was palpable two fingerbreadths below the costal margin. No masses were felt on rectal examination. Anal sphincter tone was good. No abnormalities were noted on neurological examination.

X-ray Examination. X-ray films of the chest showed multiple small and moderate sized lesions, probably metastatic tumor, in both lung fields. At least three of them seemed to be cavitary. (See Figure 1.) In a roentgen survey of the bones no abnormality was observed. An intravenous pyelogram (Figure 2) suggested the presence of a mass in the lower pole of the right kidney. A barium enema study showed a redundant colon with extrinsic pressure at the superior aspect of the proximal transverse colon, probably due to gallbladder, renal lesion or nodular density in liver.

Laboratory Data. Examination of the blood April 20, 1962, showed hemoglobin 12.1 gm. per 100 cc.; hematocrit, 35 per cent; leukocytes, 17,000 per cu. mm., with 85 per cent polymorphonuclear leukocytes, 7 per cent lymphocytes, 8 per cent monocytes and platelets slightly increased. The urine showed 1 to 2 plus proteinuria. On microscopic examination of urinary sediment, 6 to 8 erythrocytes, 10 to 20 leukocytes, 4 to 6 granular casts, 8 to 10 coarse granular casts and 3 to 4 casts of mixed composition were seen per microscopic field. Bacteria were present. Chemical examination of the blood revealed a urea nitrogen of 28 mg. per 100 cc.; cholesterol, 80-115 mg. per 100 cc.; alkaline phosphatase, 2.6-3.7 (Bessey-Lowry) units; lactic dehydrogenase, 410 units; transaminase (SGOT), 34 units and (SGPT) 27 units; bromsulfphthalein retention, 8.3-8.8 per cent. On examination of the blood 7 days later hemoglobin content was 9.8 gm. per 100 cc. and leukocytes numbered 21,000 per cu. mm., with polynucleosis. The highest eosinophile count was 3 per cent.

Cultures of sputum grew Streptococcus viridans, budding cells and neisseria, but no acid-fast organisms. On cytologic examination of sputum no unusual elements were noted, but in the urine, atypical elements compatible with hypernephroid tumor were seen. Skin tests for tuberculosis, coccidioidomycosis, histoplasmosis and blastomycosis were negative after 48 hours. The marrow revealed myeloid hyperplasia and plasmacytosis.

From the Divisions of Medicine, Surgery and Laboratories, Cedars of Lebanon Hospital, Los Angeles 29.

Submitted October 16, 1962.

*Combination of penicillin G and streptomycin.

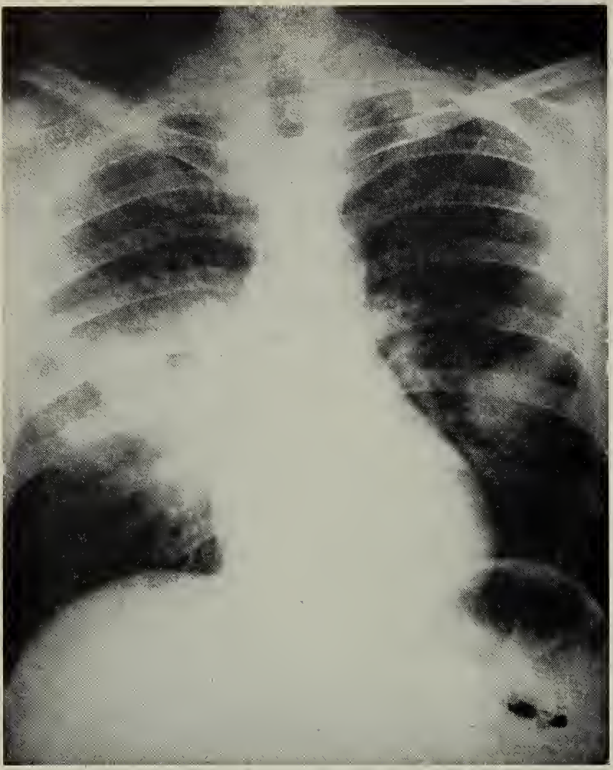

Figure 1.—Film of chest showing bilateral infiltration and cavitation.

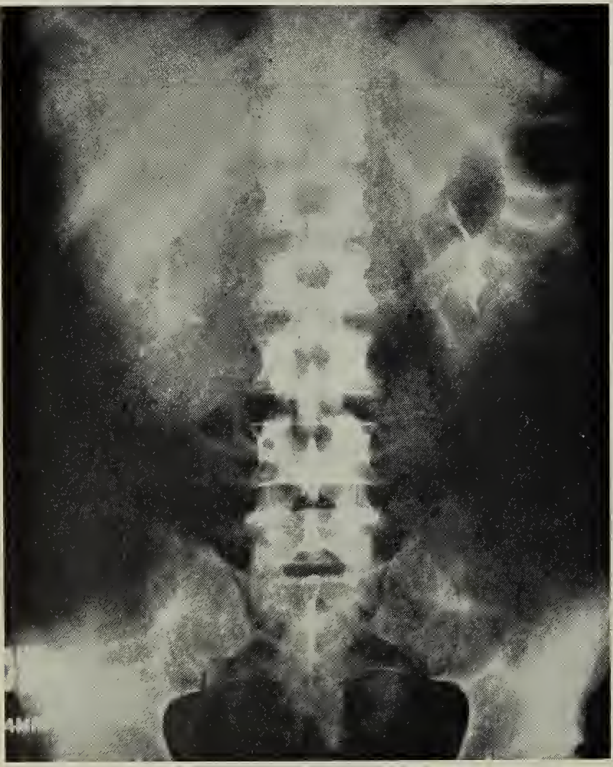

Figure 2.—Intravenous pyelogram suggestive of lesion in lower pole of right kidney.

Course in Hospital. The patient continually complained of hacking cough and felt he was getting progressively weaker. Anorexia and weight loss persisted. The temperature was elevated daily, on some days to 103° F. Red blood was noted in the stool, and on rectal examination an internal hemorrhoid was observed. Pyelography was repeated and a retrograde study showed the right kidney to be normal. However, because of the combination of the earlier radiologic findings in the kidney and lungs and the cytologic findings in the sputum, a course of cobalt teletherapy to both lungs was started. The patient was also given 5 fluorouracil (500 mg. per day). The next day he became considerably confused, sluggish and apathetic, with intermittent periods of irritability. Upon neurological examination, tremulousness, twitching and cogwheel rigidity of the upper extremities were noted. On April 29, the patient began to hiccough and the twitching became worse. The following day he suddenly became hypotensive and died.

Clinical Impression: Hypernephroid carcinoma with pulmonary metastasis.

Dr. Furman:

Consideration must first be given to a neoplasm with pulmonary metastasis. A renal tumor was suggested by the intravenous pyelogram and the results of examination of urinary sediment. However, this was not substantiated on retrograde pyelogram. No suggestion of prostatic or testicular tumor was noted on physical examination. No melanoma was seen. The barium enema study ruled out a colonic tumor and the bone survey did not demonstrate an osteogenic sarcoma. Thus, there is little evidence for a primary lesion of the type that would by metastasis bring about the pulmonary lesions observed radiologically.

Primary lung tumors must be considered. Epidermoid carcinoma can metastasize within the lung and can undergo central necrosis to give the appearance of cavitation on x-ray films. Three sputum specimens were negative for malignant cells although with this degree of involvement, it would be reasonable to expect at least a diagnosis of "suspicious for malignant disease." Also, if one postulated such widespread lesions from primary pulmonary carcinoma, bone metastasis should be present. Alveolar cell carcinoma does not present this x-ray appearance and is usually characterized by frothy sputum, hemoptysis and dyspnea.

A systemic malignant disease such as Hodgkin's disease and lymphosarcoma, I think, can be easily ruled out. There was no lymphadenopathy. The spleen was not palpable. The bone marrow was negative. Also, one would expect involvement of the hilar lymph nodes.

The collagen diseases can be quickly dismissed. There was no eosinophilia nor symptoms of bronchial asthma so characteristic of periarteritis nodosa. And nodulation, if present in the lung, is central. Disseminated lupus erythematosus does not cause the pulmonary conditions observed in this case.

The course of illness is highly compatible with an inflammatory disease. The patient ran a persistent low grade fever before entering the hospital and his temperature went as high as 103° F. in the hospital. The number of leukocytes was elevated with the cell differential showing a moderate shift to the left. Staphylococcal pneumonia could give the appearance of cavitation on x-ray, owing to abscess formation. However, staphylococci were not cultured from the sputum. Actually the sputum culture was not indicative of any specific pulmonary inflammation. The specific granulomas, tuberculosis, coccidioidomycosis, histoplasmosis and blastomycosis can be ruled out in light of negative sputum and skin tests.

Sarcoidosis does not give this x-ray appearance in the chest. There was no lymphadenopathy or evidence of mediastinal lymph node enlargement. Eosinophilic granulomas can give bilateral nodular densities of the lungs. However, they apparently do not cause cavitation. There was no evidence of bony involvement in this case.

Necrotizing or Wegener's granulomatosis is characterized by necrotizing granulomatous lesions of the nasal passages, sinuses and respiratory tract, generalized arteritis and focal glomerulitis. There is characteristically fever, leukocytosis, anemia and evidence of renal disease. Any visceral organ can be involved. The pulmonary nodules frequently show cavitation due to the necrosis of the granuloma, as the name of the disease implies. I believe this patient had this disease and that the terminal event was due to the disease involving the brain and causing thrombosis or hemorrhage, or that there was a terminal fulminating uremia.

Conference Clinical Diagnosis: Wegener's syndrome.

Dr. Otto:

One might not be criticized for arriving at a diagnosis of hypernephroma with pulmonary metastasis, especially with a report of cells in the urinary sediment compatible with hypernephroma. However, abnormal exfoliated cells should be considered "suggestive of" or "consistent with," but not "diagnostic of."

The body was that of a well developed, well nourished man of 48. Pertinent autopsy findings were limited to the lungs, kidneys, spleen and brain. Grossly, the lungs together weighed 1,980 grams. On the right, the entire middle lobe was occupied by centrally softened, gray, necrotic material (Figure 3). The medial and lateral segmental bronchi led directly into this mass and were destroyed by it, with production of a broncho-cavitary junction. The process ended abruptly at the interlobar fissures, which were thickened and fused. The right upper, right lower and left upper lobes contained multiple gray-yellow necrotic nodules from 0.3 to 4 cm. in diameter. The parenchyma between nodules, except for moderate congestion, was unremarkable. Microscopically, there were granulomata bordering larger areas of necrosis. Within the granulomas were whorls of epithelioid cells with occasional localized necrosis. Palisading was not prominent, but giant cells were abundant.

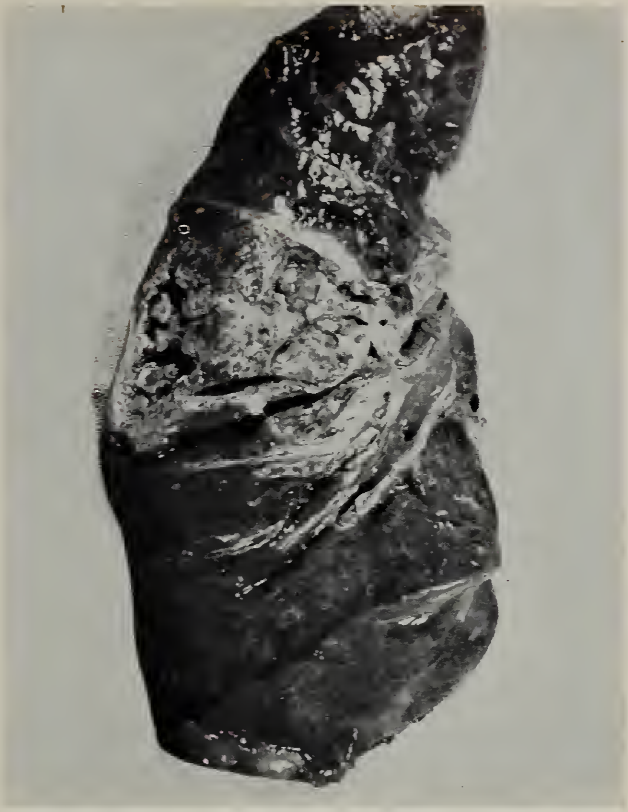
Figure 3.—Gross appearance of right lung showing massively involved middle lobe.

The kidneys were enlarged, weighing approximately 280 grams each, showing mottled red external surfaces. The cut surfaces were dark red, had prominent cortical markings and small discrete nodules. The pelvis of the right kidney was congested and slightly granular. Histologically, there was a diffuse florid glomerulitis, with swelling, cellular proliferation and fibrinoid change (Figure 4). In the renal pelvis fibrinoid necrosis of the medial coat of a small vessel in association with a surrounding inflammatory reaction suggested primary angiitis (Figure 5).

The spleen weighed 156 grams. On the external and cut surfaces were many small, firm yellow-gray foci which were identified microscopically as granulomata. One section of an otherwise apparently

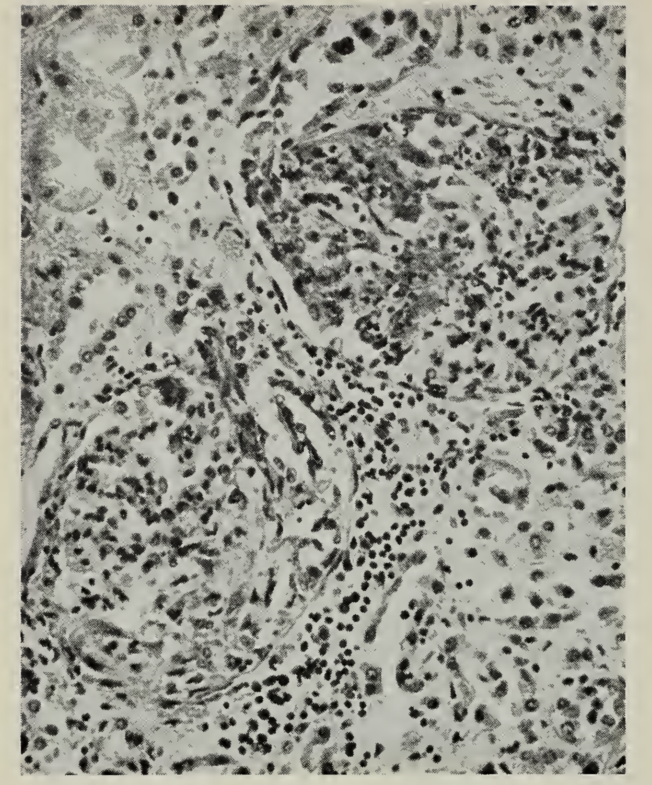

Figure 4.—Microscopic appearance of kidney showing glomerulitis (×180).

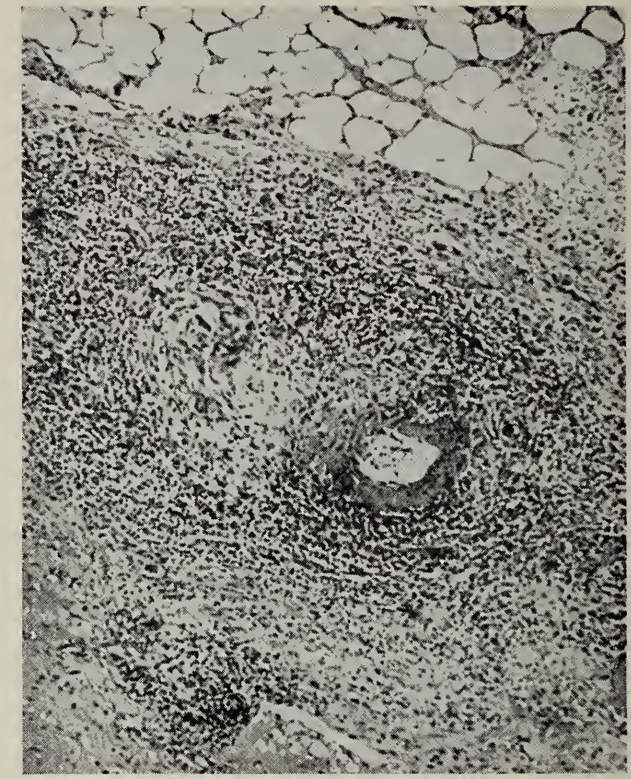

Figure 5.—Microscopic appearance of arteritis in section from renal pelvis (×80).

normal coronary artery manifested a small, localized area of intimal infiltrate of inflammatory cells, consistent with a focal arteritis. A similar endocardial focus was seen. The brain was decidedly edematous throughout. It weighed 1,590 grams. No specific microscopic findings were noted and the edema was thought due to the chemotherapy.

In summary: Necrotizing granulomatous lesions of the lung and spleen and glomerulonephritis and focal arteritis of the spleen and kidney. The provisional diagnosis was Wegener's granulomatosis.

* * *

In 1931, Klinger[2] reported a case in which a patient with severe destructive sinusitis, nephritis and uremia was found at autopsy to have splenic granulomata, arteritis and glomerular lesions. Five years later, Wegener[5] formulated the disease as an entity separable from the usual forms of periarteritis nodosa. Since then, 39 cases of Wegener's granulomatosis have been reported. We may summarize the pathological findings as:

1. Necrotizing granuloma of the upper respiratory tree, involving nodes, paranasal sinuses, nasopharynx, glottis and epiglottis.
2. Necrotizing giant cell granuloma of the lungs and bronchi.
3. Kidneys with focal necrotizing, thrombotic glomerulitis forming crescents in the subacute stage and often with focal granulomas in the renal interstitium or periglomerular areas.
4. Spleen showing small foci of necrosis, extending to total infarction, often with scattered granulomata.
5. Angiitis manifested by active or healed necrotizing lesions of the small intestines and veins, often with subsequent infarction and thrombosis or aneurysm formation. Renal and pulmonary vessels are most often involved; however, occasionally adrenal and pancreatic vessels are diseased.
6. Scattered focal granulomata with giant cells and necrosis seen occasionally in the spleen and kidneys, less frequently in the prostate, epididymis, lymph nodes and walls of large vessels.

A number of disease entities are known in which tissue changes are quite similar to those encountered in Wegener's granulomatosis. These group themselves into a complex ranging from necrotizing and granulomatous processes without angiitis, through mixed forms, to angiitis with granulomata. It is evident that the overlap at times is greater than the differences in distinguishing Wegener's from other forms of angiitic and granulomatous processes. It is because of this that Fienberg[1] reemphasized the work of Rössle[3] (1933), who defined pathergie as the "totality of morbid phenomena which can be produced by a state of altered reactivity." Fienberg called this *pathergic granuloma,* focal when one organ or tissue is involved, and disseminated when many are involved.

This brings us to the final comments in this case. Tissue cultures from the lung taken at autopsy grew out a Group III nonphotochromogenic atypical mycobacterium of the so-called Battey group. These atypical mycobacteria, known for a long time to bacteriologists, remained in obscurity until Runyon stimulated the interest of clinicians in it. Of the 143 patient strains of Group III isolated at that time (and I am certain there are more now) 14 per cent were cultured only from resected lung tissue. Most of the patients from whom these mycobacteria were cultured had serious pulmonary disease, such as pneumoconiosis, bronchiectasis and chronic emphysema. Only ten in the series had concomitant tuberculosis *per se.* These Battey group organisms differ from the scotochromogens, Group II, which are only rarely associated with another disease. The tissue reactions to these atypical acid-fast bacilli are indistinguishable from those to the mycobacteria associated with classical human tuberculosis.

In the present case, guinea pigs inoculated with tissue from the patient failed to disclose any lesions, and this patient would have been considered as having allergic granulomatosis had it not been for the positive results of culture for acid-fast organisms. It is not safe to assume that an apparently hyperergic inflammatory process is not infectious until the presence of organisms has been ruled out by microbiologic studies, including procedures suitable for the detection of viruses. How many patients dying of nephritis, rheumatic fever and arteritis have had adequate studies of this kind? There may have been a hyperergic factor in the disease process, nevertheless, certainly at least insofar as the kidney was concerned, and possibly the lung as well. Angiitis can be seen at the periphery of ordinary tuberculous lesions. We have also seen several instances of glomerular nephritis apparently associated with antibiotic therapy.

There are nosologic problems in designating this lesion. Since the term *tuberculosis* is not appropriate for obvious reasons, we suggest *atypical mycobacterial granulomas* as a suitable epithet.

Final Diagnosis: Atypical mycobacterial granuloma and glomerulonephritis.

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Clinical Diagnosis:	Hypernephroid carcinoma with pulmonary metastases
Conference Diagnosis:	Wegener's allergic granulomatosis
Final Diagnosis:	Atypical mycobacterial granuloma Glomerulonephritis

CASE REPORTS

Appendicitis with Typical Symptoms But Ectopic Appendix Due to Malrotation Of Colon

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SAMUEL HURWITZ, *M.D.*, San Francisco

WHEN ACUTE APPENDICITIS occurs in the presence of malrotated colon, the examining physician and the operating surgeon may be confronted with unusual findings, depending on the location of the cecum and appendix. In the case reported herewith, the clinical findings suggested right lower quadrant disease and yet the cecum and acutely inflamed appendix were in the left upper quadrant.

REPORT OF A CASE

A 15-year-old white boy was in good health until November 27, 1961, when abdominal pain developed. He was admitted to Mount Zion Hospital on November 29 with complaint of generalized abdominal pain, fever, diarrhea and vomiting of two days' duration. On physical examination, generalized abdominal tenderness was noted, most pronounced in the right lower quadrant, with definite rebound tenderness in this area. Hemoglobin content was 14.6 gm. per 100 cc. of blood. Leukocytes numbered 15,200 per cu. mm.—89 per cent polymorphonuclear cells, 5 per cent lymphocytes and 6 per cent monocytes. The specific gravity of the urine was 1.027. There were trace reactions for protein and acetone. Three to five leukocytes and 1 to 2 erythrocytes per high-power field were noted. On November 30, leukocytes numbered 16,500 per cu. mm. with 88 per cent polymorphonuclear forms, 4 per cent monocytes and 8 per cent lymphocytes. The rebound tenderness had become localized in the right lower quadrant and a diagnosis of appendicitis was made. At operation a McBurney incision was made and free fluid and fibrin were observed to be present in the right lower quadrant. The small bowel was distended. Neither the appendix nor any of the large bowel was visible or palpable through the incision. The McBurney incision was then closed and a right rectus incision was made. The distended small bowel was followed until the cecum and suppurative appendix were located in the left upper quadrant of the abdomen. As the liver and gallbladder were in the usual location, the anomaly was that of failure of rotation of the bowel. No organisms grew in 72 hours on a culture of peritoneal fluid taken at the time of operation. Appendectomy was carried out and the wound was closed in the usual manner. There were no complications and the patient was discharged on the ninth postoperative day.

DISCUSSION

During the sixth to tenth week of embryonic life the alimentary tube grows at a faster rate than does the coelomic cavity; therefore, a portion of the mid-gut normally protrudes into the umbilical cord. At about the tenth week the peritoneal cavity grows at an accelerated rate and the mid-gut is withdrawn into it. As it recedes into the abdomen it rotates in a counter-clockwise direction, the lower portion of the mid-gut lying wholly within the left side of the abdomen. By the eleventh week the cecum and the first portion of the colon are in the epigastrium. As the rotation subsequently progresses the cecum passes into the right upper quadrant and finally ends its migration in the right lower quadrant. After this rotation is completed the ascending mesocolon and the descending mesocolon both fuse to the back wall of the abdomen, which anchors the base of the small bowel mesentery posteriorly from the ligament of Treitz obliquely downward toward the cecal area. In malrotation, arrest of development can be characterized by an incompletely rotated cecum, and there may be a lack of attachment of any of the mesenteries to the posterior abdominal wall.[3]

A subhepatic cecum is an abnormality of the third stage of rotation of the mid-gut due to failure of the cecum to elongate and descend into the right iliac fossa, with the result that it remains in a subhepatic position.[1] If, with the cecum in this position, there is also failure of fixation of the small bowel mesentery, with a band attachment to the posterior abdominal wall, volvulus of all the small intestine may occur. The subhepatic cecum may be of surgical significance (because of the appendix's occupying a high position).[2] If appendicitis occurs in a person with this abnormality, diagnosis may be difficult. In the case here reported the findings were

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From the Departments of Surgery and Pediatrics, Mount Zion Hospital, San Francisco 15.

Submitted October 3, 1962.

localized to the right lower quadrant of the abdomen, yet the appendix and cecum were found in the left upper quadrant.

SUMMARY

A 15-year-old white boy with generalized abdominal tenderness and right lower quadrant pain, tenderness, guarding and rebound tenderness was operated upon with a diagnosis of appendicitis. Neither cecum nor appendix could be palpated through a McBurney incision and a second incision was required to locate the appendix in the left upper quadrant. Its presence there was owing to congenital malrotation of the bowel.

450 Sutter Street, San Francisco 8 (Shapiro).

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An Intestinal Complication of Anticoagulant Therapy

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HEMORRHAGE AS A COMPLICATION of hypoprothrombinemia due to anticoagulant therapy has been frequently reported. There have been few references to gastrointestinal complications other than hematemesis and melena. Reports of eight cases were found in the literature (Table 1). In each instance while the patient was receiving anticoagulant drugs an acute abdominal syndrome occurred, due to hemorrhage into the bowel wall. Under similar therapeutic circumstances, Beamish and McCreath reported upon seven patients with intestinal obstruction that was thought to be due to intramural hematoma formation.[1] Non-operative management led to recovery in this group of cases. Intramural bowel hematomata as a cause of intestinal obstruction was cited by Spencer and coworkers.[8] Reports of 34 such cases were collected from the literature, and in none of them had anticoagulant drugs been given. Many hematomata were of traumatic origin while a few were spontaneous or due to a hemorrhagic diathesis.

The case here reported is an example of intestinal obstruction associated with hemorrhage into the bowel wall due to anticoagulant therapy.

REPORT OF A CASE

A 54-year-old Caucasian man was admitted to the Mount Sinai Hospital on November 23, 1961, following 24 hours of generalized abdominal pain, nausea and anorexia. About eight hours before admission, profuse, foul hematemesis began. The abdominal pain became progressively worse and was most severe in the epigastrium. Weakness and dizziness developed approximately two hours before admission. There was no oral intake and no defecation during the entire episode.

Several surgical procedures had been carried out in 1959, because of right lower extremity pain due to advanced obliterative arteriosclerosis. These included right lumbar sympathectomy, iliofemoral endarterectomy, and insertion of an iliofemoral bypass graft. The graft did not function and was removed on August 8, 1961. For approximately three months, the patient used 5 mg. of an anticoagulant, Coumadin,® twice daily. The most recent prothrombin determination, one month before the present episode, was 15.7 seconds, 58 per cent (the control, 13.5 seconds).

On admission the patient was in great distress. His skin was pale and warm. The blood pressure was 130 mm. of mercury systolic and 90 diastolic. The pulse was 120 and respirations 16 per minute. The abdomen was flat and firm. Pronounced tenderness on pressure and rebound was noted in all quadrants. No peristaltic sounds were audible. The rectal ampulla contained brown feces. The dorsalis pedis and posterior tibial artery pulsations were strong on the left and absent on the right.

Leukocytes numbered 30,100 per cu. mm. with 87 per cent neutrophiles. The blood urea nitrogen was 37.2 mg. per 100 cc. and serum amylase was 43 units. The hematocrit was 36 per cent. Hemoglobin content was 12.3 gm. per 100 cc. Prothrombin time was 97.9 seconds or less than 10 per cent (the control was 13.5 seconds). Microscopically the urine contained many red blood cells, a few white blood cells and numerous hyaline and granular casts.

Roentgenographic films of the abdomen in both the supine and standing positions revealed no free peritoneal air. The colon contained gas and was not dilated. The stomach contained a considerable amount of gas and fluid. One strikingly dilated loop of small bowel, thought to be proximal jejunum, was seen in the mid-abdomen. It appeared to contain fluid. (See Figure 1.)

A diagnostic abdominal tap produced several drops of thick, dark red, grossly bloody fluid.

During the passage of a nasogastric tube, the patient vomited approximately 2,000 cc. of foul, dark reddish-brown and black material. Similar gastric contents were aspirated through the tube with gentle suction.

The patient was given 100 mg. of vitamin K_1

From the Divisions of Surgery and Pathology, Mount Sinai Division, Cedars of Lebanon-Mount Sinai Hospitals, Los Angeles 48.

Submitted August 15, 1962.

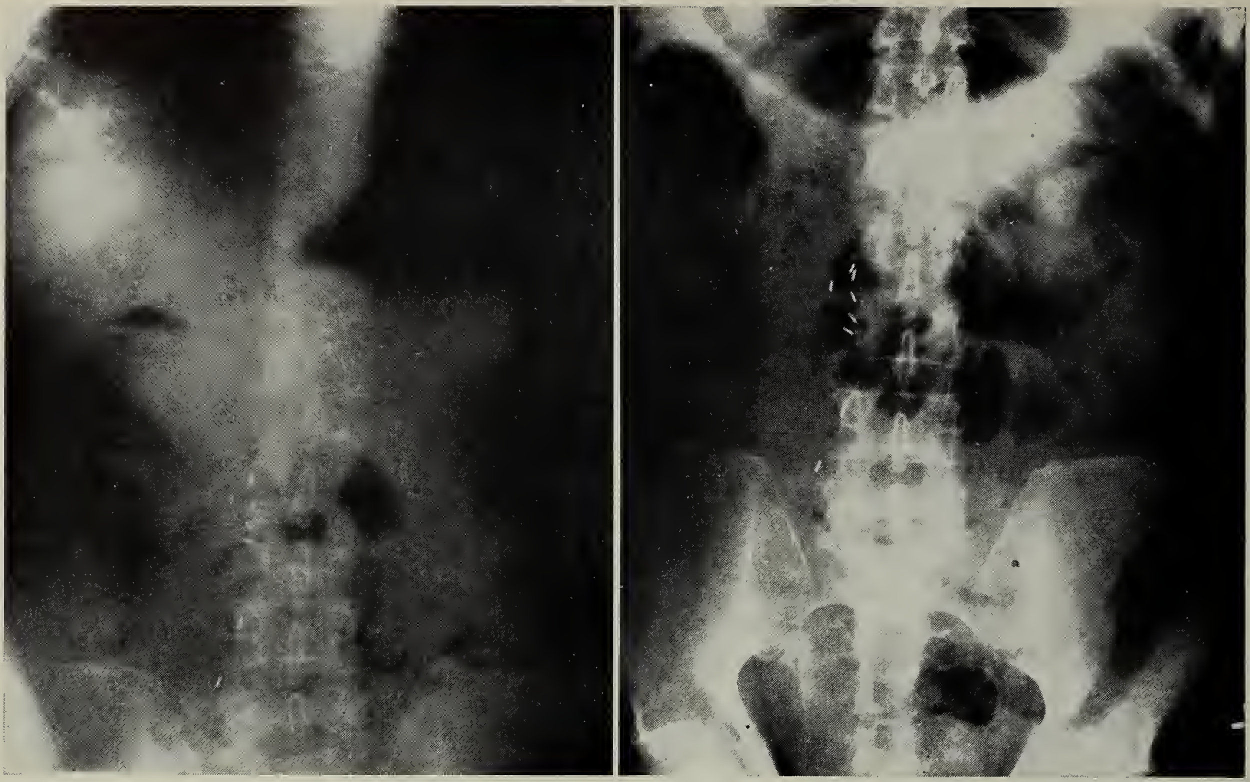

Figure 1.—*Left,* Preoperative roentgenographic film of the abdomen with patient upright, showing one dilated loop of proximal jejunum located in the midabdomen. The clips visible were placed at a previous operation. *Right,* the flat preoperative roentgenographic film of the abdomen showing the stomach dilated and the colon containing gas.

(Mephyton®) intravenously. Because of a gradually falling blood pressure and tachycardia, whole blood transfusions were started. The presumptive diagnosis for this most dramatic syndrome was upper small bowel intestinal obstruction with hematemesis and hemoperitoneum. The patient was taken to surgery.

A midline upper abdominal incision was made into the peritoneal cavity, which contained about 1,000 cc. of dark red bloody fluid. At approximately 30 cm. from the ligament of Treitz, a 60 cm. segment of jejunum was seen to be reddish black in color, oozing blood diffusely from the serosal surfaces and lacking in peristaltic activity. The mesenteric vessels, arteries and veins associated with this loop were patent. Resection of the discolored segment and end-to-end anastomosis was carried out. The anesthetist reported gradual improvement of the patient's general condition during the procedure.

The postoperative course was entirely uncomplicated. Blood pressure, hemoglobin and hematocrit determinations remained stable. Vitamin K was administered. On the second postoperative day the prothrombin time was 15 seconds, 55 per cent (the control was 12.5 seconds). The patient was discharged on December 1, 1961, the eighth postoperative day.

The resected segment of hemorrhagic small intestine was 75 cm. long. Except for the proximal and distal ends, the bowel wall was profoundly altered. This midsegment, crescentic in shape, was deep reddish black, decidedly indurated, thickened and rigid. The walls of this portion were as much as 1.1 cm. thick as compared with 0.5 cm. at the proximal and 0.3 cm. at the distal end. The lumen contained bloody mucus and granular debris. On the mucosal surface were small focal irregular superficial ulcerations which on microscopic examination showed the characteristic acute inflammatory reaction, as in the early changes of infarction. However, the bowel wall showed only a profound hemorrhagic extravasation of blood, arranged in a continuous fashion circumferentially, without infarction. This was most extensive in the submucosa and was minimal in the muscularis. Also indurated by blood were the serosa and attached segments of mesentery, to the line of transection. The major and minor mesenteric and enteric arterial and venous vessels were thin and delicate, without intimal alteration and without luminal occlusion. No significant pathologic change was noted in the somewhat enlarged hemorrhagic edematous lymph nodes of the resected mesenteric segment. (See Figure 2.)

COMMENT

The use of anticoagulant drugs may occasionally be associated with severe complications. By inducing hypoprothrombinemia and altering blood coagulability, hemorrhage is encouraged. Such a hemorrhagic process might occur at the site of trauma or pre-existing inflammatory or neoplastic lesion. Rarely, as in the patient case herein reported,

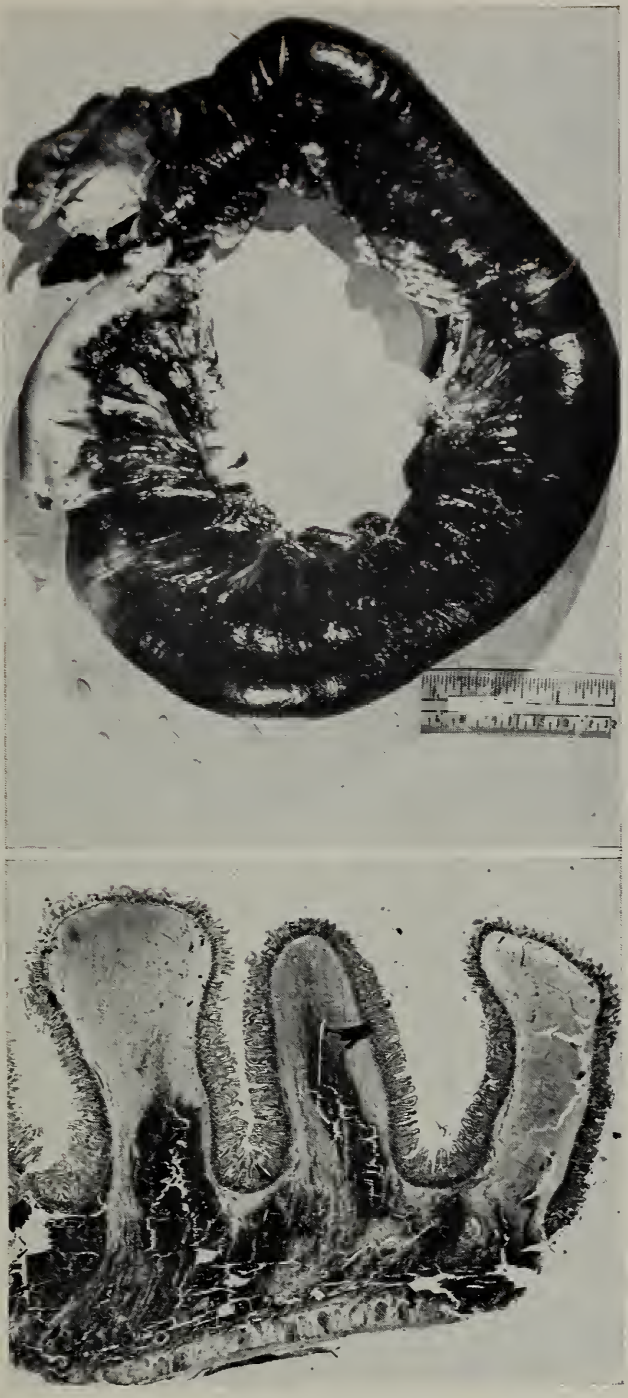

Figure 2.—*Upper*, Rigid hemorrhagic segment of jejunum and attached mesentery that was removed at operation. *Lower*, microscopic view of specimen showing hemorrhagic extravasation, predominantly submucosal.

bleeding begins without any provoking incident, other than perhaps "physiologic trauma." In this case, while the patient was taking an anticoagulant, Coumadin,® with no prothrombin determination for one month, hemorrhage began and the other complications followed. The defect in the coagulation mechanism was promptly corrected with Vitamin K. There was no problem with hemorrhage during or after the surgical procedure.

The localized hemorrhagic induration, with associated intestinal obstruction, remains unexplained in the cases reported. The basic mural jejunal alteration appears to be extravasation of blood. Because of the submucosal capacity for expansion, it becomes maximally indurated by the seepage of blood. The resultant circulatory embarrassment to the mucosa appears to account for the superficial mucosal ulcerations seen in the case presented. The latter are identical to those found in early mucosal infarction. In seven of the nine cases reported to date, this jejunal localization of hemorrhage was observed at laparotomy. Six of seven patients had intestinal obstruction, and one had an acute abdominal crisis. Two patients, who had diffuse hemorrhages and hematomata in the small bowel, were first observed in acute abdominal crisis, and all others had the symptoms of intestinal obstruction. The patients ranged in age from from 54 to 72 years (data available in eight patients). Anticoagulants were used for not less than 33 days. However, this data was not available in three instances. The prothrombin time on or shortly before admission was available in seven reports. In six instances the prothrombin time was significantly prolonged.

The course of eight patients was available. In one, death was due to simultaneous cerebral hemorrhage, and the enteric pathology was identified at autopsy. Laparotomy in seven of these patients was followed by the resection of the involved segment of jejunum in five patients. Two recovered without resection.

SUMMARY

A case of intestinal obstruction associated with a massive interstitial mural jejunal hematoma following anticoagulant therapy is described. Prothrombin levels were restored by administration of vitamin K. A segment of bowel that was not functioning because of ulceration and induration was removed.

9735 Wilshire Boulevard, Beverly Hills (Frieden).

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The Nephrotic Syndrome Complicating Infectious Mononucleosis

Report of a Case

GILBERT GREENSPAN, M.D., San Diego

SOPHISTICATED MODERN MEDICINE views tuberculosis, syphilis and the "collagen diseases" as great imitators. Perhaps infectious mononucleosis should be added to this kaleidoscopic group of disorders. Although rarely fatal this disease, of unrecognized cause, which frequently affects the teen-age and collegiate set, has been the topic of several recent reports. Extraordinary signs and symptoms have been described, indicating polysystemic abnormalities. Organ function can be deranged, and although tissue studies are not common, anatomical changes have been described. Erwin, Weber and Manning[1] reviewed some of the less well known manifestations of mononucleosis, noting involvement of the nervous system, central and peripheral, and pulmonic, cardiac, hepatic and skin lesions. In 1923 Tydie and Daniel[2] reported hematuria, pyuria and mild proteinuria in patients they had observed. Changes in the kidney included infiltration by lymphocytes in the interstices of the cortex and in the periphery of small blood vessels. The nephrons were unaltered.

In the following case report the symptom complex of massive proteinuria, hypoalbuminemia, reversal of the albumin-globulin ratio, hypercholesterolemia and severe generalized edema was associated with hematologic and serologic evidence of infectious mononucleosis. Renal biopsy excluded the more usual causes of the nephrotic syndrome.

A 16-year-old white girl was first observed September 19, 1961, for evaluation and management of edema and proteinuria. The patient had recently returned to San Diego from a summer vacation in Chicago. Soreness of the throat that developed about the first of September was interpreted as acute tonsillitis. Three intramuscular injections of penicillin were given by the referring physician. A heterophile test gave positive reaction at dilution of 1 to 224. Leukocytes numbered 13,400 per cu. mm., 84 per cent of them lymphocytes, many abnormal and suggestive of infectious mononucleosis. Over the ensuing two weeks the patient felt fatigued and the lower extremities were edematous. Urinalysis at that time showed 4+ proteinuria. The blood urea nitrogen was 14 mg. per 100 cc. On the sixteenth day of illness, leukocytes numbered 8,150 per cu. mm.—51 per cent lymphocytes some of which remained abnormal. Positive reaction to a heterophile test was obtained at dilution of 1 to 996. As generalized edema was present, a chlorothiazide diuretic was given, the body weight decreasing slightly.

Upon physical examination by the author, the only abnormality noted was generalized edema. There was no longer evidence of tonsillitis. Hemoglobin content was 13 gm. per 100 cc. of blood. The sedimentation rate was 30 mm. in one hour. Cholesterol content was 363 mg. per 100 cc. Total protein was 5.90 gm. per 100 cc. consisting of 1.65 gm. of albumin and 4.25 gm. of globulin for an albumin-globulin ratio of 0.38 to 1. The pH of the urine was 6.0. Reaction for albumin was 4 plus, for sugar negative. Upon microscopic examination 1 to 2 white blood cells per high power field were seen. Ten to 20 granular casts per field were noted at lower magnification.

A presumptive diagnosis of the nephrotic syndrome was made and prednisolone therapy begun. Treatment with antacids, a salt-free diet and potassium supplementation was maintained. At the end of one month hypoproteinemia had been relieved, albuminuria had ceased, and steroid therapy was gradually reduced. At this time the heterophile antibody titre was 1 to 224. Cholesterol content was 348 mg. per 100 cc. of blood; total protein 6.5 gm. per 100 cc. (3.75 gm. of albumin and 2.75 gm. of globulin for a ratio of 1.3 to 1); the blood urea nitrogen was 8.6 mg. per 100 cc. Several lupus erythematosus preparations were made, all of which were negative for the presence of L.E. cells.

Within two weeks of the reduction of steroid therapy massive proteinuria recurred. The urinary sediment remained essentially normal. Serum electrophoresis showed 36 per cent albumin, 7 per cent alpha one globulin, 20 per cent alpha two globulin, 18 per cent beta globulins and 19 per cent gamma globulins. Total protein at this time was 6.6 gm. per 100 cc. More vigorous steroid therapy was reinstituted and renal biopsy was done but a specific pathologic abnormality could not be diagnosed from the pathologic report. However, many of the causes of the nephrotic syndrome were excluded. At the end of six months of therapy the patient's urine became normal biochemically as well as microscopically. The cholesterol content decreased to 213 mg. per 100 cc. and total protein was 6.4 gm. per 100 cc.—4.2 gm. of albumin, 2.2 gm. of globulin, a ratio of 1.9 to 1. The blood urea nitrogen was 6.1 mg. per 100 cc. The heterophile titre was now down to 1 to 28. Hemoglobin content of the blood was 13.2 gm. per 100 cc. and leukocytes numbered 11,300 per cu. mm., consisting of 72 per cent segmented forms, 2 per cent stabs, 24 per cent normal lymphocytes, and 2 per cent eosinophils. There was no evidence of the nephrotic syndrome.

SUMMARY

In the case here reported, infectious mononucleosis, a multifaceted disease, was manifested as the nephrotic syndrome. Traditional management was carried out and the patient got well. Infectious mononucleosis should be added to the ever-growing list of reasons underlying the nephrotic syndrome. Permanent pathologic changes were not seen.

3670 Clairmont Drive, San Diego 17.

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Submitted August 14, 1962.

California MEDICINE

For information on preparation of manuscript, see advertising page 2

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EDITORIAL

The Scientific Board

After careful preparation and step-by-step progress over the past three years, the Council of the California Medical Association formally brought into functional operation an important new department of the association, the Scientific Board. The Board will have wide initiative, advisory and directive responsibilities in all the scientific and educational functions of the association. It will have representation in the House of Delegates, and one of its thirty-six members will have a place on the Council. Whether all the members of the Board or only half of them will be seated in the House will be determined by vote in the House of Delegates at this year's annual meeting of our association.

The personnel of the Board was designated by the Council when it accepted the list of nominees submitted through a special committee that had been appointed to consider nominations coming from the 18 C.M.A. Scientific Sections, from the new Forty First Medical Society and from various other well recognized scientific organizations which are not a part of the California Medical Association, but with the provision that any nominee must be a C.M.A. member.

Names of the members of the Scentific Board and of the organizations nominating them are printed on Page 165. A number of committees have been designated to deal in fine with special subjects within the Board's broad scope of interest, among them the Executive Committee and the committees on Scientific Assemblies, on California Medicine, on Continuing Medical Education, on Scientific Information, on Cancer and on Maternal and Child Care. With the exception of the Committee on Cancer, which has not yet been fully formed, the names of committee members are printed on Page 164.

Culminating a study begun some three years ago when leaders of the California Medical Association became disquieted over evidence of flagging interest in the organization as an educational and scientific instrument, the Scientific Board was designed to invigorate those functions of the association, to coordinate them and to draw them into wholesome accord with related activities carried on by other organizations of recognized stature. The structure of the Board provides a means for cooperative action of elements in the fields of scientific activities and medical education that heretofore have tended to go separate ways largely for want of a plexus of communication. The Board sets up a system of intercommunication among the scientific, educational, clinical, legislative and administrative functions within the California Medical Association and provides a means for relating these functions with pertinent activities of the other organizations that have representation on the Board.

In concept and structure the Scientific Board puts new emphasis on the first stated aim of the medical association: "To promote the science and art of medicine, the protection of the public health and the betterment of the medical profession."

Keogh Preparations

The last congress, after more than ten years of debate and committee consideration, adopted HR 10, now known as the Keogh Law. The law, in brief, permits self-employed persons to take a tax deduction for a portion of the funds they choose to put away against the day of their retirement.

Congress thus put the self-employed person on a par with his salaried brother, who may enjoy a retirement program for which his employer is allowed to take tax deductions.

Congressman Keogh's bill was adopted despite the opposition of the President and the Secretary of the Treasury, who argued that application of such a law would result in a loss of federal income. The President, reportedly, signed the bill into law for the simple reason that he did not want to face the possibility of loss of White House prestige in an almost-certain overriding of his veto.

On this brief background, professional men are rejoicing over their new freedom to set up personal retirement programs and to be allowed tax deductions in the process. All that is missing is a set of regulations to let these self-employed people know what they may or may not do. One aspect of the law must be remembered: A physician setting up his own retirement program must do the same for employees who have been with him three years or more.

The California Medical Association several months ago realized that the issuance of regulations to govern retirement plans would probably be several months in the making. The Treasury Department must draft such regulations, try them out in public hearings and complete a final draft. All this takes time. The C.M.A. Council, therefore, approved formation of a committee of medical society executives to draft the framework of a suitable statewide program to apply to all members. The thought was not to stifle any individual programs but simply to draft a statewide program which by its very size would bring about operating economies not possible for smaller units of insurance or investment.

Members of the C.M.A. were advised to go slowly in entering into any of the programs held out so glitteringly by salesmen for this or that insurance or investment firm.

The government regulations have not yet been issued. In this respect the caution of the Council has been borne out.

Meanwhile, the Keogh Law is already in effect, as of January first of this year. Any program entered into as late as next December 31 will have all the tax advantages possible, dating back to the first of the year. Physicians wanting to establish a retirement plan in their own offices may wait in confidence for the issuance of federal regulations, knowing that they have until the end of the year to make a plan effective as of the first of the year.

The C.M.A. Council, through its special committee, is now calling attention to the possibility of setting aside retirement funds now, to be applied to a program to be entered into later. The physician who plans to set up a retirement program under the terms of the Keogh Law may find it much easier to estimate his costs now and set aside regular sums during the balance of the year rather than wait for the year-end and be faced with the need to develop a large sum of money at one time.

The Council's original suggestion—go slow—still holds. To it may now be added: Plan now for a later retirement plan application. The retirement you insure is your own.

COMMITTEES OF THE SCIENTIFIC BOARD

Members may not serve on more than three committees

EXECUTIVE

7 members—2 from Council; 1 Editor, ex-officio. Including the Chairman of Committee on Continuing Medical Education and Chairman of Committee on Scientific Assemblies. No more than two from any discipline.

Edward B. Shaw, Chairman, S. F.
Victor Richards, S. F.
Albert C. Daniels, S. F.
L. H. Garland, S. F.
George C. Griffith, L. A.
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Malcolm S. M. Watts, S. F., C.M.A. Council

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9 members—including Chairman of Committee on Continuing Medical Education.

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J. G. Moore, L. A.
Wm. P. Longmire, Jr., L. A.
John Dillon, L. A.
Albert C. Daniels, S. F. (Chmn. Committee on Continuing Education)

Alternates: Jerome Bettman, S. F., Knox Finley, S. F.

CALIFORNIA MEDICINE

5 members.

Clayton Loosli, L. A., Chairman
Grace Bell, L. A.
Eugene Farber, Palo Alto
Don King, S. F.
David Rubin, L. A.

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3 members.

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William P. Longmire, Jr., L. A.
William Belford, San Diego

CONTINUING MEDICAL EDUCATION

5 members—including Chairman of Committee on Scientific Assemblies. Directors of Continuing Medical Education of Medical Schools to sit as consulting members. No more than one from any discipline.

Albert C. Daniels, S. F., Chairman
Alonzo Neufeld, L. A.
Donald Petit, L. A.
Victor Richards, S. F. (Chmn. Committee on Scientific Assemblies)
Antonio Franzi, S. F.

SCIENTIFIC INFORMATION

5 members.

L. H. Garland, S. F., Chairman
Edmund Keeney, San Diego
Stuart Knox, L. A.
G. R. Biskind, S. F.
L. S. Goerke, L. A.

Alternate: Packard Thurber, Jr., L. A.

MATERNAL AND CHILD CARE

9 members—2 members of Scientific Board (1 pediatrics, 1 obstetrics).

Keith P. Russell, L. A., Chairman
Herbert Holden, San Leandro
Leland Blanchard, San Jose
Saul Robinson, S. F.
James Ravenscroft, San Diego
Charles M. Blumenfeld, Sacramento
Russell Mapes, Beverly Hills

CANCER

7 members—at least 3 members of Scientific Board.

(To be announced)

SCIENTIFIC BOARD

OF THE CALIFORNIA MEDICAL ASSOCIATION

Nomination Suggested by

C.M.A. Section on:		
Allergy	EDMUND L. KEENEY	San Diego
Anesthesiology	JOHN B. DILLON	Los Angeles
Dermatology	EUGENE M. FARBER	Palo Alto
Ear, Nose and Throat	WALTER E. HECK	San Francisco
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Association of American Medical Colleges	JOHN B. deC. M. SAUNDERS	San Francisco
	CLAYTON LOOSLI	Los Angeles

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 487th Meeting of the Council, Los Angeles, Ambassador Hotel, January 11, 1963.

The meeting was called to order by Chairman Anderson in the Ballroom of the Ambassador Hotel, Los Angeles, on Friday, January 11, 1963, at 2:00 p.m.

Roll Call:

Present were President Wheeler, Speaker Doyle, Secretary Hosmer, and Councilors MacLaggan, Wilson, Todd, Quinn, O'Neill, Bullock, Ham, Rogers, Dalton, Murray, Davis, Miller, Watts, Campbell, Morrison, Kaiser, Anderson, Dozier, Cosentino and Grunigen.

Absent for cause, President-Elect Sherman, Vice-Speaker Heron, Editor Wilbur and Councilor O'Connor.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Clark, Marvin, Whelan, Klutch and Tobitt, Mrs. Griffith and Doctor Batchelder of C.M.A. staff; Howard Hassard, legal counsel; Ben H. Read of the Public Health League; county executives Lingerfelt of Fresno, Field of Los Angeles, Baker of Los Angeles, Grove of Monterey, Brayer of Riverside, Donmyer of San Bernardino, Nute of San Diego, Thompson of San Joaquin, Colvin of Santa Clara, Brown of Sonoma, Bailey of Tulare, Rideout of Butte-Glenn and Rosenthal of Forty First; Doctor Lester McDonald of State Department of Social Welfare; John Pompelli of the A.M.A.; Doctors T. Eric Reynolds and Gerald W. Shaw; Doctors T. Ballentine Henley and Benjamin Wells of the California College of Medicine; Doctors A. F. Kandlbinder, D. M. Dubrasich and Osman H. Hull of Monterey County; Doctors A. F. Howard and L. J. Snyder of Fresno County, and others.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 486th Council meeting, held December 15, 1962, were approved.

2. *Nursing Homes:*

President Wheeler reported on a meeting of the California Commission for Accreditation of Nursing Homes and Related Facilities and told of the need for additional working capital to continue this operation. A total of $30,000 is being sought and the Association has been asked to guarantee $6,000 of additional bank loans. On motion duly made and seconded, and with the announced approval of the Finance Committee, it was voted to guarantee bank loans for an additional $6,000 for the commission.

Mr. Hassard presented a proposed legislative bill which would assure that rates paid to nursing homes under state programs would be at the same level as rates for other patients in the area. On motion duly made and seconded, it was voted to instruct the Committee on Legislation to secure sponsorship for such legislation.

3. *Financing of Medical School:*

Doctor Wheeler announced that Doctors Joseph P. O'Connor and Arthur A. Kirchner had found it

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necessary to resign from a committee established to plan and carry out programs for assisting in the financing of the California College of Medicine. On motion duly made and seconded, it was voted to request the Los Angeles County Medical Association to name two of its members as successors to these members of the committee.

4. *State Medical Fees:*

Doctor Wheeler read a letter received from Edwin W. Beach of the State Department of Finance, in which he proposed several alternatives to be used in the establishment of adequate medical fees to be paid by the state under its various programs. There was considerable discussion on these proposals and others were offered by members of the Council. To resolve the matter, the following motions were duly made, seconded and voted:

1. To urge the California State Department of Finance to use the 1960 Relative Value Studies as the base for any program of fees to be paid by the state.
2. To urge the state Legislature to appropriate adequate funds so that dollar factors for the 1960 Relative Value Studies may be designed to maintain total costs for all state medical services at equitable levels.
3. To request the State Department of Finance to confer with an appropriate committee of the Association in setting factors to apply for the balance of the current fiscal year.

On motion duly made and seconded, it was voted to request the Committee on Committees to designate the committee referred to above.

5. *Committee on Mental Health:*

Doctor Stuart Knox, chairman of the Committee on Mental Health, reported on a mental health congress held by the A.M.A. in Chicago, at which a large number of physicians from California were present.

Doctor Knox also requested authority for the committee to cooperate with state authorities in furthering the concept of providing mental health services in the patients' home areas. On motion duly made and seconded, such authority was voted.

6. *Finance Committee:*

Councilor Davis, chairman of the Finance Committee, reported on a recommendation of the Committee on School Health that a health educator be employed by the Association. On motion duly made and seconded, it was voted to refer this proposal to the Scientific Board and the Bureau on Communications for study and report.

Doctor Davis also reported on a proposal that a program be established to investigate all cases of death from aplastic anemia, using an area team setup similar to that employed in current programs looking into perinatal mortality cases. The committee recommended that this matter be referred to the Committee on Dangerous Drugs. On motion duly made and seconded, this recommendation was approved.

Doctor Davis also presented the budget prepared by the committee for the 1963-1964 fiscal year and outlined the conditions under which the budget had been prepared. Discussion was held on the proposed budget item covering the attendance of Alternate Delegates to the A.M.A. at both annual and clinical sessions. On motion duly made and seconded, it was voted to authorize alternate delegates to attend both annual and clinical meetings of the A.M.A. and to adjust the budget item accordingly.

7. *Ad Hoc Committee on Scientific Board:*

Councilor Watts, reporting for the ad hoc committee on scientific board, presented a recommendation that the Pacific Society for Ophthalmology and the Association of American Medical Colleges be added to the list of organizations from which members of the Scientific Board might be appointed. On motion duly made and seconded, it was voted to add these two names to the approved list.

Doctor Watts also presented the recommendation that the Forty First Medical Society, whose members have not yet had an opportunity to become identified with scientific sections, be asked to make three nominations for consideration for appointment to the Scientific Board, pending the 1963 Annual Session. On motion duly made and seconded, this recommendation was approved.

Final recommendations for members of the Scientific Board will be presented at the February meeting of the Council.

8. *Bureau of Research and Planning:*

Doctor Gerald W. Shaw, chairman of the Bureau of Research and Planning, presented specimen copies of digested reports emanating from the bureau, designed for distribution at moderate cost. The format was referred to the Bureau on Communications for consideration.

9. *Commission on Public Agencies:*

Doctor MacLaggan, chairman of the Commission on Public Agencies, reported that Type III oral polio vaccine has been given clearance for administration and that plans are going ahead throughout the state for this final round in polio immunization campaigns. Persons above age 30 are to be warned of the slight danger of disease inherent in this material.

Doctor MacLaggan also reported on his attendance at a hearing held by an interim committee of the state Legislature on the question of broadening the laws on therapeutic abortions. Doctor MacLaggan testified in behalf of the Association to the effect that the CMA is in favor of any amendments which will be conducive to the welfare of the patient.

10. Commission on Community Health Services:

Councilor Morrison, reporting for Doctor Harold Kay, chairman of the Commission on Community Health, reported on a proposed broad research project in school health, for which funds may be available through the California Dairy Council. The commission recommended that this project be reviewed by the Committee on School Health and the California Medical Education & Research Foundation. On motion duly made and seconded, this referral was voted, a report to be made later to the Council.

11. Committee on Legislation:

Councilor Rogers reported on a meeting of the allied health professions on the subject of legislation anticipated in the 1963 legislative session. One problem anticipated is the question of podiatrists being admitted to hospitals for surgical privileges.

12. Legal Department:

Mr. Hassard reported that two suits have been filed against the California College of Medicine and others on grounds that the degree of M.D. had not been granted to the plaintiffs. The college will defend these suits.

13. New Business:

Two resolutions adopted by the California Academy of General Practice were presented for consideration. One asking that differences in industrial fees between services performed by radiological specialists and generalists was, on motion duly made and seconded, referred to the Committee on Fees. The second, seeking elimination of the term "socialized medicine" in medical organization usage, was on motion duly made and seconded, referred to the Bureau on Communications.

On motion duly made and seconded, it was voted to award a suitable scroll or plaque to Doctor Donald A. Charnock for his leadership and activities for the past ten years in connection with student and hospital house officer conferences in Los Angeles.

On motion duly made and seconded, it was voted to contribute $500 to a scholarship fund established in the names of the two late sons of Doctor and State Senator Stephen P. Teale.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:30 p.m. in the memory of the family of Doctor Stephen P. Teale, victims of a traffic accident.

CARL E. ANDERSON, M.D., *Chairman*
MATTHEW N. HOSMER, M.D., *Secretary*

In Memoriam

BARTHOLOMEW, JOHN YOUNG, San Francisco. Died January 8, 1963, in San Francisco, aged 80, of heart disease. Graduate of the College of Physicians and Surgeons of San Francisco, 1909. Licensed in California in 1911. Doctor Bartholomew was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

BURLINGAME, RALEIGH W., San Diego. Died November 25, 1962, in San Diego, aged 79. Graduate of Eclectic Medical University, Kansas City, Missouri, 1912. Licensed in California in 1916. Doctor Burlingame was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

CLARKE, HARVEL BUTLER, Pasadena. Died January 26, 1963, in Pasadena, aged 55, of cerebral hemorrhage. Graduate of Washington University School of Medicine, St. Louis, Missouri, 1940. Licensed in California in 1942. Doctor Clarke was a member of the Los Angeles County Medical Association.

✤

CREEDON, RICHARD J., Monterey. Died January 29, 1963, at Pebble Beach, aged 39, in an automobile crash. Graduate of Harvard Medical School, Boston, Massachusetts, 1950. Licensed in California in 1957. Doctor Creedon was a member of the Monterey County Medical Society.

✤

GILRANE, JOHN J., San Marino. Died January 10, 1963, in San Marino, aged 44, of a coronary. Graduate of the University of Southern California School of Medicine, Los Angeles, 1944. Licensed in California in 1944. Doctor Gilrane was a member of the Los Angeles County Medical Association.

✤

HATFIELD, J. GORDON, Burbank. Died January 3, 1963, in Burbank, aged 62, of carcinoma of the liver. Graduate of the California College of Medicine, 1962. Licensed in California in 1962. Doctor Hatfield was a member of the Forty First Medical Society.

Helms, Gage, Long Beach. Died February 1, 1963, in Rolling Hills, aged 50, of heart disease. Graduate of Ohio State University College of Medicine, Columbus, 1936. Licensed in California in 1945. Doctor Helms was a member of the Los Angeles County Medical Association.

✤

Kessell, John S., Fresno. Died January 24, 1963, in Fresno, aged 63. Graduate of the University of Adelaide Faculty of Medicine, Australia, 1923. Licensed in California in 1945. Doctor Kessell was a member of the Fresno County Medical Society.

✤

Logan, James O., Long Beach. Died September 15, 1962, aged 55, of internal hydrocephalus due to probable malignancy. Graduate of the Medical College of the State of South Carolina, Charlestown, 1943. Licensed in California in 1952. Doctor Logan was a member of the San Bernardino County Medical Society.

✤

Long, William D., Los Angeles. Died February 3, 1963, at Needles, in an automobile accident, aged 48. Graduate of the California College of Medicine, 1962. Licensed in California in 1962. Doctor Long was a member of the Forty First Medical Society.

✤

Olson, Henry John, Los Angeles. Died January 15, 1963, in Los Angeles, aged 68, of cerebral hemorrhage. Graduate of Columbia University College of Physicians and Surgeons, New York, N. Y., 1919. Licensed in California in 1951. Doctor Olson was a member of the Los Angeles County Medical Association.

✤

Paxman, Dalton Gordon, Oakland. Died January 30, 1963, in Castro Valley, aged 68, of myocardial infarction. Graduate of Johns Hopkins University School of Medicine, Baltimore, Maryland, 1919. Licensed in California in 1921. Doctor Paxman was a member of the Alameda-Contra Costa Medical Association.

✤

Porter, Marshall Elmer, Porterville. Died January 28, 1963, aged 53, of heart disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1933. Licensed in California in 1933. Doctor Porter was an associate member of the Stanislaus County Medical Society.

✤

Riemer, Robert, Beverly Hills. Died February 4, 1963, in Beverly Hills, aged 51. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1935. Licensed in California in 1936. Doctor Riemer was a member of the Los Angeles County Medical Association.

Robinson, Hewitt Hassalle, Oakland. Died January 22, 1963, in Oakland, aged 57, of acute myocardial infarct. Graduate of Emory University School of Medicine, Atlanta, Georgia, 1930. Licensed in California in 1931. Doctor Robinson was a member of the Alameda-Contra Costa Medical Association.

✤

Schlappi, John Carl, San Diego. Died December 20, 1962, in San Diego, aged 59, of congestive heart failure (rheumatic heart disease). Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1928. Licensed in California in 1928. Doctor Schlappi was a member of the San Diego County Medical Society.

✤

Sink, William Dan, Santa Maria. Died January 8, 1963, in Cloverdale, aged 70, of cardiovascular renal disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1918. Licensed in California in 1918. Doctor Sink was a retired member of the Santa Barbara County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

Spencer, George A., Sacramento. Died December 25, 1962, in Monterey, aged 91. Graduate of Harvard Medical School, Boston, Massachusetts, 1892. Licensed in California in 1907. Doctor Spencer was a retired member of the Sacramento County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

Stanton, Robert H., Pasadena. Died February 5, 1963, in Pasadena, aged 68, of carcinoma of the lung. Graduate of Rush Medical College, Chicago, Illinois, 1920. Licensed in California in 1920. Doctor Stanton was a member of the Los Angeles County Medical Association.

✤

Traut, Herbert Frederick, San Francisco. Died January 28, 1963, in San Francisco, aged 68. Graduate of Johns Hopkins University School of Medicine, Baltimore, Maryland, 1923. Licensed in California in 1942. Doctor Traut was a member of the San Francisco Medical Society.

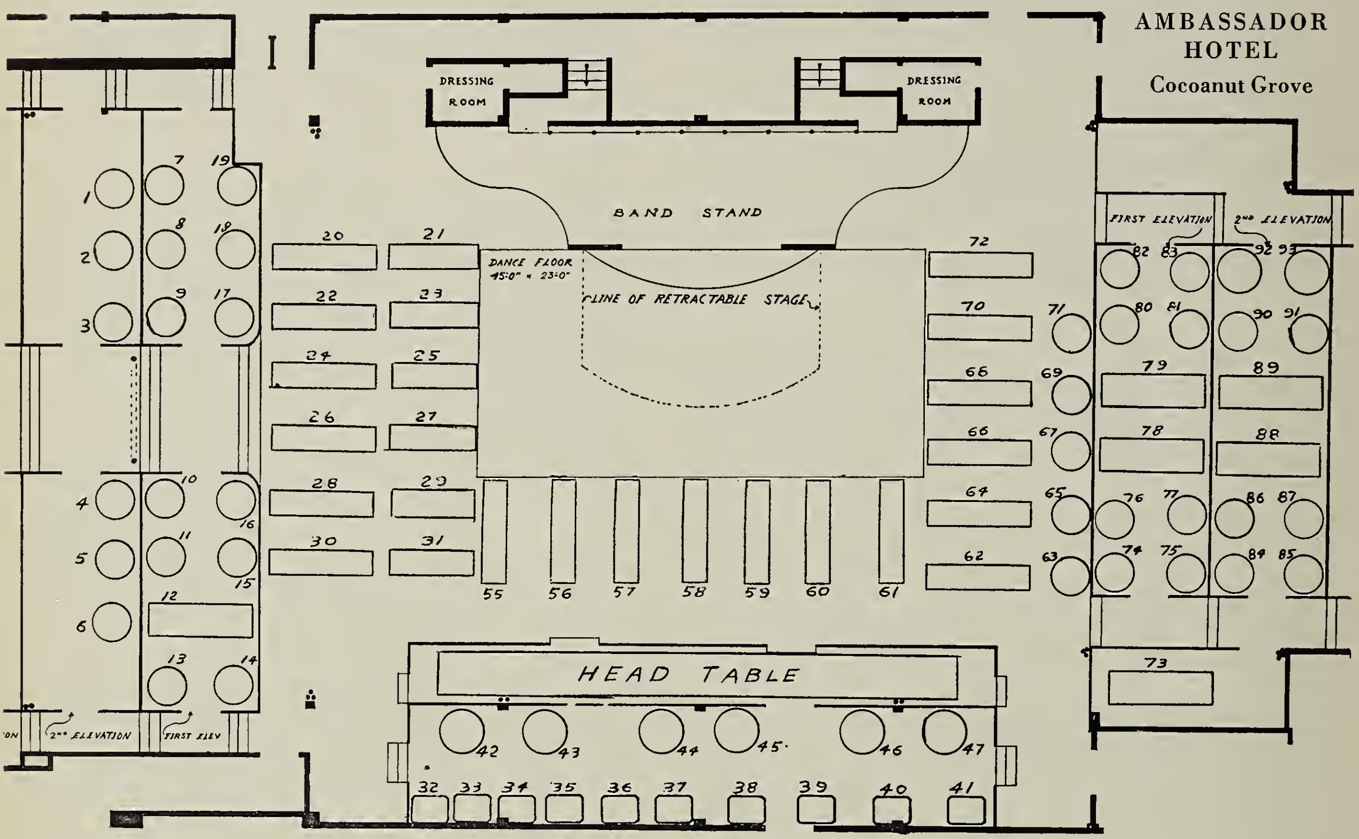
✤

Wineland, Albert John, Los Angeles. Died January 25, 1963, in Los Angeles, aged 64, of carcinoma of the pancreas. Graduate of Indiana University School of Medicine, Bloomington-Indianapolis, 1926. Licensed in California in 1930. Doctor Wineland was a member of the Los Angeles County Medical Association.

PRESIDENTS' *dinner-dance*

SUNDAY, MARCH 24, 1963

AMBASSADOR
HOTEL
Cocoanut Grove


DRESSING ROOM
DRESSING ROOM
BAND STAND
DANCE FLOOR 45'0" x 23'0"
LINE OF RETRACTABLE STAGE
HEAD TABLE
FIRST ELEVATION
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2ND ELEVATION
FIRST ELEV

Choose the location of your table from the floor plan above. The corresponding table number below gives the number of seats at each table. Please fill out coupon on opposite page.

Table Number	Number of Seats	Table Number	Number of Seats	Table Number	Number of Seats	Table Number	Number of Seats	Table Number	Number of Seats
1	4	19	4	36	2	61	12	78	12
2	6	20	10	37	2	62	12	79	12
3	4	21	10	38	2	63	4	80	6
4	4	22	10	39	2	64	12	81	4
5	6	23	10	40	2	65	4	82	4
6	4	24	10	41	2	66	12	83	6
7	4	25	10	42	8	67	4	84	4
8	4	26	10	43	8	68	12	85	6
9	4	27	10	44	8	69	4	86	6
10	4	28	10	45	8	70	12	87	4
11	4	29	10	46	8	71	4	88	12
12	12	30	10	47	8	72	12	89	12
13	4	31	10	55	12	73	10	90	6
14	4	32	2	56	12	74	4	91	4
15	6	33	2	57	12	75	6	92	4
16	4	34	2	58	12	76	6	93	6
17	4	35	2	59	12	77	4		
18	6			60	12				

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

ASIAN INFLUENZA has made its long-awaited appearance in the United States in recent weeks but appears to be far removed from California as of this moment.

Indices of influenza activity as monitored by the Bureau of Communicable Diseases have not revealed the presence of the disease in the state. Widespread increases in school absenteeism in early February was determined to be the result of inclement weather and other epidemic illnesses such as gastroenteritis and measles.

The Viral and Rickettsial Disease Laboratory has been receiving no more than the usual volume of diagnostic specimens for respiratory disease, and has not identified influenza among them.

* * *

The winter season is characteristically the lowest point in the seasonal cycle of poliomyelitis. During the first seven weeks of the year, one paralytic case with onset in 1963 is known to have occurred. It is hoped that the incidence of paralytic poliomyelitis, which dropped to record lows in 1961 and 1962, will be depressed even further as the result of the widespread use of the new oral vaccine.

Community immunization programs sponsored by medical societies in almost all California counties have achieved notable success and place the state at the forefront in the national effort to make available this newest weapon in the fight to wipe out the disease.

Type I poliomyelitis vaccine was given to about 10.1 million Californians, or 59 per cent of the state's population, in mass programs alone, and Type II was given to over 9.6 million. Completion of the Type III phase of the programs is now being accomplished.

* * *

A total of 293 instances of animal rabies was reported in 1962, compared with 302 reported cases the preceding year. One hundred and eighty-nine of the cases were in skunks, the most ever recorded for that species in California. Ninety-nine of the cases were in five counties: Contra Costa, Napa, Sacramento, San Joaquin and Sonoma.

Rabies in dogs showed a significant increase over the preceding four years, resulting from extension of the Imperial County-Mexicali focus of infection to the San Diego-Tijuana area. Of the 47 reported cases in dogs last year, 16 were in Imperial County and 30 in San Diego County. The other occurrence was in a dog in Butte County; rabies developed five days after the animal's return from Mexico.

* * *

The State Health Department last month submitted to the State Senate a report of chronic respiratory disabilities in California.

The report deals with non-tuberculous, non-malignant chronic respiratory disabilities. These include chronic respiratory diseases such as asthma, bronchitis, emphysema, fibrosis, and bronchiectasis. Also included are neuromuscular disorders, of which poliomyelitis and muscular dystrophy are examples.

Concern about such disabilities is being shown by the general public, by professional medical organizations and by voluntary and official health agencies. A resolution of the California State Senate, which requested this report, takes cognizance of this concern.

Recommended in the report is the establishment of regional respiratory rehabilitation centers, north and south, for persons with severe respiratory disabilities. These centers would provide evaluation, care, and specialized services and equipment for the disabled on an inpatient, outpatient and home care basis.

Also recommended was that a chronic respiratory disease epidemiology program be established in the State Health Department to collect information on the frequency and severity of these diseases; to improve diagnostic criteria and to evaluate various methods of prevention, treatment and rehabilitation.

NORTH COAST COUNTIES

Presented by University of Southern California School of Medicine, California Medical Association Committee on Postgraduate Activities, and North Coast Counties Medical Societies.

Guest Speaker: HANS POPPER, M.D., Pathologist-in-Chief, The Mt. Sinai Hospital, New York, and Professor of Pathology, Columbia University College of Physicians and Surgeons, New York.

HOST: Sonoma County Medical Society . . . REGIONAL CHAIRMAN: Richard C. Barnett, M.D., 450 Pitt Avenue, Sebastopol. INSTITUTE FEE: $15.00. For additional information contact Postgraduate Activities office, California Medical Association, 693 Sutter Street, San Francisco 2. *All California Medical Association members and their families are cordially invited to attend.*

regional postgraduate institute

hoberg's resort
lake county

april 4-5, 1963

THURSDAY, April 4, 1963

Morning Plenary Session

9:30 a.m.—PANEL: **Liver Function Tests**—Phil R. Manning, M.D.; Moderator, William P. Mikkelsen, M.D.; Hans Popper, M.D.; Allan G. Redeker, M.D.; Telfer B. Reynolds, M.D.

Three Concurrent Sections—11:00 a.m.-12:30 p.m.—You may go to one of your choice

SECTION 1: **SYMPOSIUM ON LIVER DISEASE**

11:00 a.m.—**The Medical Approach to the Jaundiced Patient**—Telfer B. Reynolds, M.D.

11:30 a.m.—**The Pathologist's Contribution in Jaundice**—Hans Popper, M.D.

12:00 p.m.—**The Surgeon's Role in Management of Jaundice**—William P. Mikkelsen, M.D.

SECTION 2

11:00 a.m.—**Pulmonary Function Tests**—Oscar J. Balchum, M.D.

SECTION 3

11:00 a.m.—**The Medical Interview**—David H. Blankenhorn, M.D.; Allen J. Enelow, M.D.

Afternoon Plenary Session

2:00 p.m.—**Viral Hepatitis**—Allan G. Redeker, M.D.

Two Concurrent Sections—You may go to one of your choice

SECTION 1: **SYMPOSIUM ON LIVER DISEASE**

3:00 p.m.—SMALL GROUP SESSIONS: **Review of actual case examples of patients with jaundice**—William P. Mikkelsen, M.D.; Hans Popper, M.D.; Allan G. Redeker, M.D.; Telfer B. Reynolds, M.D.; Andre Viallet, M.D.

SECTION 2

3:00 p.m.—**Workshop in Pulmonary Function Tests (Part I) Case examples**—Oscar J. Balchum, M.D.

FRIDAY, APRIL 5, 1963

Morning Plenary Session

9:15 a.m.—**Problems in Gallbladder Disease**—William P. Mikkelsen, M.D.

Three Concurrent Sections—10:15 a.m.-12:30 p.m.—You may go to one of your choice

SECTION 1: **SYMPOSIUM ON LIVER DISEASE**

10:15 a.m.—**Drug Jaundice**—Hans Popper, M.D.

11:00 a.m.—**Jaundice in Pregnancy**—Allan G. Redeker, M.D.

11:30 a.m.—**The Usefulness of Peritoneoscopy**—Andre Viallet, M.D.

12:00 p.m.—**Autoimmunity in Liver Disease: "Lupoid Hepatitis"**—Telfer B. Reynolds, M.D.

SECTION 2

10:15 a.m.—**Emphysema**—Oscar J. Balchum, M.D.

SECTION 3

10:15 a.m.—**The Medical Interview**—David H. Blankenhorn, M.D.; Allen J. Enelow, M.D.

Afternoon Plenary Session

2:00 p.m.—**Clinical Pathologic Correlations in Cirrhosis**—Hans Popper, M.D.

Two Concurrent Sections—You may go to one of your choice

SECTION 1

3:00 p.m.—**Management of Ascites**—Allan G. Redeker, M.D.

3:30 p.m.—**Recognition and Management of Hepatic Encephalopathy**—Telfer B. Reynolds, M.D.

4:00 p.m.—PANEL: **Management of Portal Hypertension**—Phil R. Manning, M.D., Moderator; William P. Mikkelsen, M.D.; Telfer B. Reynolds, M.D.

SECTION 2

3:00 p.m.—**Workshop in Pulmonary Function Tests (Part II)**—Oscar J. Balchum, M.D.

WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

Health Careers

SINCE WORLD WAR II there has been an enormous growth in the population of the United States and especially in California. This is due as we all know to the increase in birth rate and extended life span. This means that there are more of the young and the old-age groups which need the greatest amount of medical care. In order to provide this care, our health services must be expanded, not only in providing more medical facilities but even more in the recruitment of added personnel. We feel that there is a health career for every student's interest and intellectual capacity. Our job is to make them aware of these opportunities.

Your auxiliary is attempting to make inroads into this field of recruitment. There are close to fifty county Health Careers chairmen in California. Working with them are many others from our membership of 7,369 women. They are doing this in cooperation with other professional groups such as the National Health Council, the National League of Nursing, American Physical Therapy Association and many others.

Our purpose is to recruit qualified students for careers in approximately 24 Health Careers. Each county has its own way of accomplishing this but, for the most part, there are three areas of emphasis: (1) Health Careers Clubs, (2) Health Careers Conferences, (3) Junior High School assembly programs.

The object of the Health Careers Club is to interest and inform boys as well as girls about the health career opportunities open to them, and to broaden students' scope of their own communities' medical facilities and needs. This is accomplished by the showing of specialized professional films and organizing field trips to hospitals, schools of nursing, schools for retarded or handicapped children, physical therapy clinics, pharmacy prescription laboratories and many others. Some of the meetings have as guest speakers professional medical specialists who are happy to answer the variety of questions that are asked. Some clubs even sponsor floats for their annual high school parade. There was a total of 167 clubs in California last year sponsored by the Woman's Auxiliary to the C.M.A. and an increase is expected this year to match expanded high school construction.

The Health Careers Conference is one of the best means of disseminating information not only to students but, more important, to the high school counselors. Only juniors and seniors in high school are eligible and there are 600 to 800 students in attendance. The conference usually consists of a full day's program. There are panel discussions with representatives who are professionals in their field, a wide variety of health career movies and a hospital tour. In addition to this, booths are set up staffed by students and professionals in careers ranging from nursing and dietetics to occupational therapy and medical illustrators. This gives the student a chance to discuss a particular career on a very informal basis with a girl or boy near his own age. The Health Careers Conference day has an added advantage in that there is a follow-up program. The students who are interested in a particular career are invited to visit the offices or clinics of the medical specialist. There were 14 conferences held last year here in California with at least two more in the offing this year. Counselors are overwhelming in their praise of this project, and as they are attending in increasing numbers we can be sure that more students will be encouraged to follow a career in the health field.

Since there has been a real lack of communication between professional groups and junior high schools, we are attempting to fill the gap by sponsoring assembly programs. One such program is the showing of the film, "Helping Hands for Julie," which depicts the work of eight or nine medical specialists in their fight to save a little girl's life. It is dramatic as well as informative and elicits intelligent and thoughtful questions from these 13 and 14 year olds. We agree with school officials that many of the basic attitudes which later affect specific career decisions are acquired during the junior high school years and it is not too early to seek basic commitment to health-related sciences and the idea of service for improvement of human welfare.

A widespread fallacy these days is that any able student who wants to enter a health field can find ample aid to finance training. Quotations from a report issued last year by the Association of American Medical Colleges bear out this fact.

> . . . the average medical student has to pay more than twice as much as the average graduate student for his education . . . The medical student who receives (non-refundable) stipend income from any source . . . receives an average of about $500 per year . . . The Arts and Science graduate student who receives stipend income is provided with an average of $2,000 per year, . . . Thus, if one combines the fact that the medical student, as contrasted with the graduate student, has to pay twice as much for his education at the same time he receives one-fourth as much stipend income . . . it becomes clear that there is an 8:1 fiscal ratio of income and expense working to persuade the college senior to enter graduate school rather than medical school.

The result of our failure to provide enough financial aid for students is that able students from the lower income groups are not able to enter the profession of their choice. Some might believe that the new Government program administered under the auspices of the Department of Health, Education, and Welfare is the answer to our problem. It is—to a limited extent; however, only those students in Physical Therapy, Occupational Therapy and Nursing can benefit, and there are shortcomings. For example, students taking a three-year pre-physical therapy course are unable to receive any financial aid until their senior year when they are actually in a professional school of Physical Therapy.

There are a number of volunteer agencies such as the National Health Foundation, A.M.A.-E.R.F. and others who are working hard to span this financial gap. Last year your California auxiliary provided loans to the amount of $6,699 and scholarships of $26,821. These, however, are not enough, especially when we consider industrial competition for our best students. We are hoping that with the C.M.A. and its Auxiliary working together in recruitment and fund raising, more students in California will follow in the steps of many of us in Health Careers.

Mrs. Robert J. Wiese
Health Careers Chairman
Woman's Auxiliary to the
California Medical Association

INFORMATION

Socio-Economics of Medical Care

A Report of the Bureau of Research and Planning, California Medical Association

Interest in the area of medical socio-economics has largely come about due to the proliferation of social welfare programs and advances in the distribution of health services in the private sector of the economy. The increasing role of our government has also been a stimulus. With the advent of new techniques for the financing of care, a large volume of institutional literature has appeared delving into issues which range from the role of the medical profession in the evaluation of quality of medical care to the measurement of demand for and prepayment of numerous types of health care services. Since the area of medical socio-economics is not considered "pure" enough to be categorized as a discipline, the range of periodicals, government and non-government publications and books, in which data are found, is vast. This report will briefly describe some of the more important sources of data in the area of medical socio-economics. Major emphasis is given to the literature which provides current statistical data on the operational aspects of public and private programs providing health care services, and ancillary activities which affect the market for health care activities. Leading publications of governmental and other community agencies are cited to illustrate the range of materials available to the public and to the medical profession.

THE LARGEST COLLECTOR of raw data and publisher of operational and financing statistics is the Federal Government. The data collected on health care services are based on information received from numerous surveys carried on, or sponsored by federal agencies, and from operation statistics of programs administered by the Federal Government alone and/or in conjunction with State Governments.

1. The U. S. Public Health Service (HEW) has published a series of monographs based upon field surveys called the *U. S. National Health Survey*. This project may be broken down into four distinct subdivisions containing material on the following: *Series A* presents program descriptions, survey designs, concepts employed, and definitions of terms in the survey; *Series B* covers health interview survey results for various topics, e.g., hospitalization, patients discharged, and length of stay; *Series C* presents survey results on selected health characteristics of specified groups within the population, and *Series D* contains developmental and evaluation reports of the health survey. The material covered by the U. S. National Health Survey includes data collected over various time periods beginning with July 1957. Aside from the U. S. National Health Survey, the Public Health Service publishes many other monographs and reports on selected topics that are of interest to persons involved in socio-economic research.

2. The office of Program Analysis (HEW) publishes monthly a report entitled *Indicators* which usually has as a feature a summary report in some field of the socio-economics of medical care. Besides the monthly feature this publication also includes data on measures of illness, medical care prices, health facilities, and Public Health Service programs. Also included is information on welfare and income maintenance programs and education. An annual summary of these data appears in a publication by the same agency entitled *Trends*.

3. The Social Security Administration (HEW) publishes monthly the *Social Security Bulletin*. This bulletin contains articles related to social insurance, e.g., income maintenance, disability insurance, workmen's compensation and expenditures for health care. Also included are notes and reviews on special topics, and statistical summaries which contain operating statistics on programs administered (such as number of persons covered and cost or outlay) by this Administration separately or jointly with individual states. An annual summary of the data is also published.

4. The Bureau of Labor Statistics (U. S. Department of Labor) publishes a number of periodicals. Probably the most familiar one is the *Monthly Labor Review* which features articles on the labor market, and analyses of changes taking place therein. These articles cover topics such as enrollment under union health and welfare plans, workmen's compensation, and other activities affecting labor. Another periodical of some importance in this area is the BLS monthly review of *Employment and Earnings*, which is a compendium of statistical data on employment status, number of workers in various occupations, unemployment, and hours of work. This publication also reports on payroll employment by industry, industry hours and earnings, and labor turnover. The BLS has also published a series of monographs on employee-benefit health plans which include information on hospital, surgical, and regular medical benefits, and major medical insurance. Among the group of publications is a digest of one hundred selected health and insurance plans under

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NOTE: A list of sources reported upon in this article may be obtained from Bureau of Research and Planning, California Medical Association, 693 Sutter Street, San Francisco 2.

collective bargaining. One of the most quoted publications of the BLS is its *Consumer Price Index.* The index reflects changes in the price level of goods and services found in the City Worker's Family Budget. The index is published monthly for national changes and for some of our larger cities, and less frequently for smaller cities.

5. The Office of Business Economics (Department of Commerce) publishes the *Survey of Current Business* monthly. This publication includes feature articles which are primarily oriented towards the business community. However, the *Survey* also includes annual data on expenditures for a large variety of goods and services. Its annual July issue provides data on expenditures for health services.

6. The Bureau of the Census (Department of Commerce) is responsible for the *Census of the Population,* which is taken every ten years, and the *Current Population Reports* which are conducted every month through the enumeration of selected samples. The *Census of Population* in its PC (1) series collects data on the Characteristics of Population (this is Vol. I of the bound set). These series can be broken down into four main categories: *PC (1) A* contains the final count of the number of inhabitants; *PC (1) B* has information on the general characteristics of population such as sex, age, marital status, and race for places with a population of 1,000 or more; *PC (1) C* reports on the general social characteristics of the population, such as place of birth, employment status, occupation, and incomes of individuals and families; and *PC (1) D* supplies detailed information covered in report C with the data cross-classified by age, color, and other characteristics. The information for each of the above sub-classifications is broken down into 57 parts, each of which represents a state or U. S. overseas possession; California code number is six (6) so that all parts pertinent to this state are listed as PC (1) 6 A or PC (1) 6 C. The *Current Population Reports* provide data collected on a sample basis on such subjects as personal and family characteristics, income, school enrollment and mobility of population. These reports also contain data that are reported by the Bureau of Labor Statistics for its estimates on employment and unemployment, hours of work, and earnings. Aside from population data, the Bureau of the Census also collects information on numerous areas, e.g., agriculture, trade, construction, foreign trade, government employment and finances, housing, industry, and does special reports on a contract basis.

The single most important Federal publication is, of course, the *Statistical Abstract of the United States,* issued each year. This convenient reference volume is not only the standard summary of statistics on the social, political and economic organization of the United States, but it is also the index to all the other government statistical publications, such as those cited above.

Aside from information collected and reported upon in their respective publications by the various departments within the Federal Government, there is a large body of data to be found in the various Congressional Committee Reports. Generally, the data are not original with the Committee. However, the fact that many committees collect information on a topical basis may provide the reader with data not available generally within any other single source. It is to be noted that much of the material found in Committee Reports is based upon data collected by the departments within the administrative branch of government.

STATE GOVERNMENT

As would be expected, the state agencies within California are the largest compilers of data reflecting the functional and operational aspects of programs that provide health and ancillary services to an indigent and dependent population. However, these agencies also collect data on the general social and economic environment for the total population of the state. As previously indicated, the state is responsible for the management of programs established by the Federal Government for the needy and retired population.

1. The State Department of Public Health prepares and publishes annually the *California Public Health Statistical Report* covering the following areas: Tuberculosis, Communicable Disease, Crippled Children Services, and Vital Statistics. It also publishes numerous reports on selected subjects such as alcoholism, occupational health, air pollution and family health. A semi-monthly report on information in the field of public health, *California's Health,* is also published by this department; this report often includes a summary article on some pertinent research topic and general news in the field of public health. The information compiled in these reports, including other data, is published in a summary report referred to as a *Biennial Report Edition of California's Health.* The Department has also been responsible for publications reviewing the health status of the California population; one of these is entitled *Health in California* (based on data collected in 1954), the other is information collected for the Governor's Committee on Medical Aid and Health entitled *Health Care for California,* published in 1960.

The State Department of Industrial Relations collects data on the activities of workers and employers, including information on union contracts, health and welfare provisions, workmen's compensation cases, wage settlements, and other conditions of work. These data appear in the *California Industrial Relations Reports,* which are published several times a year. One of the latest reports includes a short review of health and welfare plans in California under union agreements in 1961.

Another publication of interest is the *California Labor Statistics Bulletin for Metropolitan Areas;* this is a monthly publication covering non-agricultural employment, earnings, and hours worked, by industry, for all the metropolitan areas in California. Special reports on *Wages and Hours* in particular industries are also published, as are reports on the number of wage and salary workers in particular non-agricultural industries, and reports on *Work Injuries* by industry. Recently the Department has published two reports of special interest: the *Budget for a Self-Supporting Working Woman* and *Union Labor in California, 1960.* Much of the work that is involved in developing these reports is done by the Division of Labor Statistics and Research.

The State Department of Social Welfare publishes a monthly statistical report, *Medical Care Services and Expenditures* (Statistical Series MC 2.). This report includes financial information on the Old Age Security Program, Aid to the Blind, Aid to Needy Children, Aid to the Needy Disabled, and the Medical Assistance Program for the Aged. The Department also publishes a monthly statistical summary of *Public Welfare in California* (Statistical Series PA 3.) which indicates the number of persons covered under programs by each county and the amount of money allocated, over the previous period, for such programs. This information is accumulated into biennial summaries.

Another important compendium of information is the *California Statistical Abstract, 1961* which is published by the Economic Development Agency of the State of California. This reference work is a compilation of information collected from all the state departments, and it also serves as an index to the state statistical publications and sources.

NON-GOVERNMENT

The number of publications published by nongovernmental groups is an indication of the growth of research activities in the field of socio-economics of medical care. This *Report* mentions just a few of the publications and periodicals currently available as source material.

The Health Information Foundations, in cooperation with the National Opinion Research Center of the University of Chicago, has jointly conducted surveys of the civilian population, to determine how this population behaves in securing health services, and attitudes manifested by the public to some of the organizational features of supplying such services. Aside from this survey technique, HIF also has worked on projects which have reviewed the costs of securing services, the medical care price index, morbidity, and other subjects. The Foundation has issued newsletters and pamphlets covering a wide range of topics.

The American Public Health Association's *Journal of Public Health,* a monthly magazine, is another source of information. This journal contains articles on epidemiological surveys, numerous aspects of public health care, e.g., nursing, cost of health services, and on organizational aspects of medical care.

The Health Insurance Institute, an organization maintained by insurance companies throughout the nation, publishes annually a *Source Book on Health Insurance Data.* This source book includes information on the extent of coverage, trends in health insurance premiums, types of insuring organizations, and other data important in order to evaluate the role of voluntary health insurance in the United States.

The American Medical Association's Council of Medical Services reports biennially a description of prepayment plans, entitled *Voluntary Prepayment Medical Benefit Plans.* These descriptions include medical society approved plans, including Blue Shield, approved plans other than Blue Shield Plans and Blue Cross, or Blue Cross Coordinated Plans that are not medical society approved. Proceedings of various conferences and reports of its several committees also contain information in several areas of the socio-economics of medical care.

An excellent source for current events in the field is published by the Bureau of Public Health, School of Public Health of the University of Michigan, entitled *Public Health Economics.* This monthly compilation of events and opinions in the field of medical care covers happenings in the area of legislation, government programs, prepayment plans, health personnel, and activities in other countries.

The Bureau of Research and Planning of the California Medical Association has, since its inception, been involved in a number of projects that are of importance to the field of socio-economics and which are of long-term duration. However, the Bureau has also been engaged in the dissemination of economic and sociological information as it relates to the provision of medical care and other health care services. Many of these are to be found in the Bureau's *Socio-Economic Reports* which are published in CALIFORNIA MEDICINE and in county society bulletins throughout the state.

California Medical Association, 693 Sutter Street, San Francisco 2.

Cancer

Report on Study of Service Needs of Some Cancer Patients in California

THE CALIFORNIA DIVISION of the American Cancer Society announces the completion of a four-year study on the non-medical service needs of cancer patients. The existing service program of the Society includes referral, information on community resources, surgical dressings, transportation assistance, and loan of sick room equipment. In the past, the service program of the Cancer Society varied somewhat from county to county. Consequently, the study was designed to determine the most important needs of cancer patients. It was hoped that from this information, a more uniform and intelligent service program could be created. Throughout the study, the Commission on Cancer has given medical consultation and direction to the research project.

The data were obtained primarily from interviews with physicians, patients and relatives, for patients hospitalized in eight hospitals in five California communities. The final sample consisted of 876 cancer patients, selected randomly in each hospital. Both voluntary and county (public) hospitals were included.

Analysis of cancer site distribution shows a distribution fairly comparable to that of the Tumor Registry of the California Department of Public Health. The patients, as would be expected, are older, less educated, and with less annual income than the general public.

Some key findings are: one out of eight diagnosed cancer patients, and one in four of the physicians reported failure or delay in carrying out the recommended treatment plan completely. Some of the reasons were emotional problems of the patient, fear of hospitalization or surgery, and difficulties in arranging transportation or resolving home responsibilities.

There was an increase in service needs following hospitalization. Fifty per cent of the patients had two or more chronic conditions, and there were major limitations in usual activity in 16 per cent. There was general agreement in the discernment of the need for and securing of services. A substantial proportion of respondents listed: drugs, discussion of personal problems, transportation, dressings, nursing care at home, household assistance, and recreation at home as major service needs.

For more detailed analysis and discussion, the interested physician should refer to the complete report. Copies of the 75-page study (including 38 tables) may be obtained on request to the California Division, American Cancer Society, 875 O'Farrell Street, San Francisco 9, California.

The California Division of the American Cancer Society is now studying the report and is planning such revisions to its service program as are necessary. No changes will be made without considered judgment by the Commission on Cancer of the California Medical Association and those physicians who serve on the state and county committees and boards of the American Cancer Society.

BURT L. DAVIS, M.D.
Chairman, Commission on Cancer
California Medical Association

L. ROBERT MARTIN, M.D.
Chairman, Service Committee
California Division, American Cancer Society

Antivivisection

DEPRESSING AND URGENT is the information that the antivivisectionists are on the move once more. This time, their threat is much more serious than any time in the past. Heartened by the success of a humane slaughter bill, these people are determined to deliver restrictive legislation against medical research at the new session of Congress.

In late September, 1962, hearings were held on the Moulder and Griffiths Bills. Marching under the banner of "humane societies" the proponents of the bills received cordial and sympathetic treatment before the committee. Following conclusion of the hearings, the subcommittee chairman declared: "There will be some sort of protective legislation enacted at the next session of Congress."

False and misleading attacks on the entire field of medical investigation must be met with truth. People must be told that the humane care and humane treatment of laboratory animals are the rule rather than the exception. By now, it is apparent that even this is not enough.

The best counter-strategy is to launch sensible legislation to provide for even better care, through research, construction of facilities, training, and dissemination of information on humane care and treatment of laboratory animals.

When the antivivisectionists make their next move you will be alerted to respond and encourage response of others against restrictive legislation and in favor of our progressive bill.

LEWIS T. BULLOCK, M.D.
Chairman Committee for Constructive Federal
Policy on Laboratory Animal Care,
National Society for Medical Research

Tax-Favored Retirement Funds for Self-Employed

THE NEW Self-Employed Individuals Retirement Act of 1962 (Keogh bill) encourages the nine million self-employed persons—physicians, dentists, lawyers, accountants, farmers, sole proprietors and partners—to establish tax-favored retirement plans for themselves and their employees. The new law makes it possible for retirement plans for the self-employed to have tax benefits similar to those accorded to corporations in connection with Treasury-approved pension plans for employees.

Tax Privilege

A self-employed person whose plan qualifies can make certain current tax deductions for contributions, and the fund and its earnings are exempt from current income tax until the year or years of its distribution. Before this tax-favored status was provided, money invested for retirement was "after tax dollars" and these invested dollars generally had to pay taxes on whatever money the invested fund earned each year.

Who Is Eligible to Benefit from the Act?

A self-employed person is, for the purposes of the act, considered both an employer and an employee. Those who choose to do so may apply to establish a Treasury-approved pension plan. Anyone who performs personal services and receives income for the services he renders, is a self-employed person within the meaning of the act.

Self-Employed Persons With Employees

To be approved, a plan must also cover all full-time employees with three or more years of service. The contributions for employees must be nonforfeitable, at the time they are made.

Contributions for the self-employed person himself cannot discriminate in his favor as compared with contributions he makes for his employees.

Under certain circumstances benefits for covered employees can take into account the Social Security taxes paid by self-employed individuals for their employees.

A full-time employee is one whose customary employment is for more than twenty (20) hours a week and more than five (5) months of the year. Seasonal, temporary and part-time employees are excluded.

Contributions and Deductions

A self-employed individual may contribute for himself each year, $2,500 or 10 per cent of his "earned income," whichever is less.

There is one exception which applies to a partner who owns 10 per cent or less of a partnership. Such a person is not subject to any limitation on the amount that may be contributed on his behalf under a plan. However, in both instances, the tax deduction allowed is only one-half of the contribution or a maximum of $1,250.

TABLE 1.—*Amount Accumulated in Self-Employment Retirement Funds. Comparison With and Without the Benefit of the New Retirement Income Provisions. $2,500 Contributed Annually. Assume Interest Rate of 4 Per Cent, and Joint Returns.*

Years	Under New Provisions	Income Tax Bracket Without Benefit of H.R. 10 (P.L. 87-792)			
		30 Per Cent	40 Per Cent	50 Per Cent	60 Per Cent
	After Taxes				
10	$26,512*	$24,139	$22,305	$20,531	$18,816
15	43,571*	38,930	35,608	32,425	29,405
20	63,589*	55,973	50,590	45,558	40,871
25	86,665*	75,520	67,464	60,057	53,285

*Note: See column 9, Table 2.

Source: Department of Economic Research, American Medical Association.

The full amount of the contribution for covered employees is tax-deductible.

What Is Earned Income?

For a self-employed individual such as a physician, earned income is the net earnings from performing personal services, such as professional fees.

Where both capital investment in a business and personal services are income-producing factors, earned income is assumed to mean 30 per cent of the net profit of the business.

How Do You Start a Retirement Plan?

One who wants to obtain the tax benefits available under the new law must first adopt a written retirement plan of his own or become part of an established plan.

Funding the Contributions

The act provides that contributions can be funded (vested or trusteed) in any one of the following ways:

a. In custodial accounts with a bank.

b. In insurance annuity contracts.

c. In trusts—by associations, for example, where investment funds are pooled and the power to direct investments exists.

d. In face-amount certificates.

e. In special type U. S. Government bonds.

The Internal Revenue Service (IRS) regulations will spell out in some detail how this law may be applied and what arrangements the Service will approve. No final plans can be approved until these regulations are published—probably not before the middle of 1963.

It is clear that an individual plan will be expen-

TABLE 2.—*Funds Accumulated by Plans Under H.R. 10. Assumptions: $2,500 Annual Contribution, 4 Per Cent Interest, Taxpayer Files Joint Return.*

Years	(1) $2,500× 4 Per Cent Factor	(2) Years× $2,500	(3) Earnings Not Taxed (1)−(2)	(4) Years× $1,250	(5) Total Not Taxed (3)+(4)	(6) Distribution (5)÷5	(7) Joint Returns	(8) Tax (7)×5	(9) Net Fund (1)−(8)
10	$ 30,015	$25,000	$ 5,015	$12,500	$17,515	$ 3,503	$ 700.60	$ 3,503	$26,512
15	50,059	37,500	12,559	18,750	31,309	6,262	1,297.64	6,488	43,571
20	74,445	50,000	24,445	25,000	49,445	9,889	2,171.14	10,856	63,589
25	104,115	62,500	41,615	31,250	72,865	14,573	3,491.90	17,460	86,655

Source: Department of Economic Research, American Medical Association.

sive and cumbersome. Banks and trust companies will devise group custodial plans which will be available at rather minimal cost. Insurance companies will present many funded retirement proposals. The special U. S. Government bonds will be readily available for all those who choose them.

Under a somewhat similar law, the Canadian Medical Association several years ago developed for its members a very flexible trust fund. Insurance coverage is available, as well as investment in stocks, bonds, mutual funds and other investments. Under such a plan, each member can direct how he wants his contributions to be invested and he may change his plan from time to time. The California Medical Association has established a committee to investigate all possibilities and to recommend the most favorable and flexible plan that can be devised. Since a broad base offers many savings, it was concluded that all county medical societies would benefit by a uniform statewide inquiry to develop standards and programs best suited to the need of all physicians.

How Are Benefits Paid?

Payment of benefits to the self-employed person under a plan cannot begin until he reaches age 59½, unless he is permanently disabled earlier. Benefits are also payable to his beneficiary at his death or within five years after his death. Payments must begin no later than age 70½.

Benefits from the plan are taxable as ordinary income if paid out during the lifetime of the primary beneficiary and during the lifetime of a surviving wife if joint survivorship has been provided for in the plan.

If premature distribution of benefits occurs for any reason other than permanent disability, a tax penalty must be paid.

Lump Sum Distribution

Although a self-employed person cannot get capital gain treatment on a lump sum distribution, an averaging method of computing the tax is used which may make the tax come to substantially less than the tax on ordinary income. Contributions for which no tax deductibility was allowed at the time they were made, are excluded from the taxable portion of benefits distributed.

Covered employees of the self-employed are entitled to the same capital gains privilege on lump sum distribution as employees under corporate plans—a maximum of 25 per cent on the amount received.

Comparison of Benefits That May Be Accumulated With and Without Use of the New Law

Tables 1 and 2 were prepared by the A.M.A. Department of Economic Research to illustrate the way in which this law may help a physician plan a tax-sheltered retirement fund.

Is It Necessary to Establish a Plan at Once?

No. As a matter of fact, no plan can be approved by the IRS until the regulations are published.

A plan may be established and contributions made at any time before December 31, 1963 and have the contributions receive tax benefits for 1963.

Each person will have to study the various plans available to determine what tax advantages exist, if any, for him. It would appear that this first tax law for the self-employed may not be as helpful for some as it is for others.

It may reasonably be assumed that in the years ahead this law will be improved. It has been referred to as the most important tax break ever given to the self-employed. It does provide incentives for self-employed persons to participate in tax-deferred retirement plans for themselves and their employees.

Many corporations have found, through experience, that the establishment of retirement plans has been an incentive for talented people to seek employment with them and remain with the organization. It has materially assisted in reducing the turnover of employees, which is usually very costly to any employer.

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Dr. Edwin H. Lennette, chief of the Viral and Rickettsial Disease Laboratory of the State Department of Public Health, has been appointed to the National Advisory Council for Allergy and Infectious Diseases by the Surgeon General of the United States Public Health Service. The appointment is for a four-year term beginning January 1, 1963.

LOS ANGELES

The first unit in a projected multi-million dollar expansion program for the **California College of Medicine** was dedicated February 13. The new, ultra-modern, two-story Livingston Research Center, constructed at a cost of $257,000, is dedicated to research in the fields of neurology, neuro-physiology, pathology, chemistry, pharmacology and psychiatry, and also will house a special section devoted to the study of epilepsy.

* * *

More than 300 Glendale citizens joined in saluting **Dr. Wilbur Rogers,** member of the Council of the California Medical Association, last month on the occasion of his installation as president of the Glendale Chamber of Commerce.

* * *

A $21,100 **grant for cardiovascular research** has been given to the University of Southern California School of Medicine by the Moore-White Medical Foundation, Los Angeles, a non-profit corporation for the advancement of medicine and medical research in southern California.

The research, which will center on the study of fat metabolism, will be directed by Dr. George C. Griffith, professor of medicine, and Dr. Willard J. Zinn, associate clinical professor of medicine.

SAN FRANCISCO

The second annual **Sterling Bunnell Memorial Lecture** on reconstructive surgery will be delivered this year by Mr. R. Guy Pulvertaft of Derby, England.

The lectures will be presented at Lane Hall, Presbyterian Medical Center, Webster and Clay Streets, San Francisco, on April 23 and 25. The titles of the two evening addresses will be "Flexor Tendon Repair in the Hand" and "Advances in Reconstructive Surgery in Great Britain."

SANTA CLARA

Dr. John A. Leutscher, professor of medicine, Stanford University School of Medicine, will receive the John Phillips Memorial Award of the American College of Physicians at the organization's 44th annual session which is to be held in Denver April 1-5. The award is for distinguished contributions to internal medicine.

STANISLAUS

Dr. Robert S. Westphal, health officer of Stanislaus County, has been elected president of the California Conference of Local Health Officers. He succeeded Dr. Dwight M. Bissell, health officer for the City of San Jose.

Dr. Carolyn Albrecht of Marin County was elected vice president, and Dr. A. Frank Brewer of Merced County, secretary.

Two bills under consideration in Sacramento (SB 333 and SB 374) to lift **fees paid physicians for industrial accident and state aid services** to the "usual and customary" level are now under consideration by the legislature's Committee on Governmental Efficiency. Both were introduced by Senator Carl L. Christensen, Jr., of Eureka.

One (SB 333) would make **"customary fees" the minimum standard** for schedules established by the Industrial Accident Commission for workmen's compensation cases. The other would set **fees for public aid cases** "commensurate with and as nearly as practical equal to the usual and customary amount paid for such services by the public generally." The latter bill also would instruct the Department of Finance to "periodically determine" what these customary fees are.

Both measures have the endorsement of the California Medical Association Council and the Public Health League. In discussing them during last month's Council session and referring particularly to SB 374, Chairman Carl Anderson said:

"The state now pays fixed fees on schedules that were calculated several years ago at approximately 80 per cent of average fees. As there has been no change in the state schedules in many years, the gap between customary fees and what the state pays grows larger and larger.

"The State Department of Finance is now working on a uniform state medical fee schedule to apply to all programs but, in the absence of legislative policy, it is making the fees fit the available budgeted money, irrespective of the fact that the fees so fixed are customarily sub-standard."

THE PHYSICIAN'S *Bookshelf*

PROGRESS IN NEUROLOGY AND PSYCHIATRY—An Annual Review, VOLUME XVII—edited by E. A. Spiegel, M.D., Professor and Head of the Department of Experimental Neurology, Temple University School of Medicine, Philadelphia. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 607 pages, $14.00.

Again, this annual review serves as a convenient source of references to current investigations and trends in Neurology, Neurosurgery, and Psychiatry. Because of the steadily increasing volume of experimental and clinical work relating to the nervous system and to the behavioral sciences, the references in the various sections of the book are quite brief. In the one or two sentence reviews of the nearly 5,000 papers surveyed, there are a few instances where some meaning has been lost or slightly modified, but the bibliographic lists at the end afford ready access to original articles. In the basic science sections relating to neurophysiology, neuropharmacology, etc. one finds a quick and interesting survey of most of the current work going on in the most active laboratories. The clinical sections on neurosurgery, neurology, pediatric neurology, and psychiatry contain rather more detailed references, so that one is able to scan recent developments in these areas more critically. Certainly, one might be inclined to take a somewhat critical attitude toward what appears to be random speculation in the clinical psychiatry section, since some progress toward basic understanding of the same described problems is reported in the sections on neuropharmacology and neurophysiology. While the book is of great value in drawing attention to what is going on in areas as divergent as pediatric neurology or epilepsy physiology and psychiatric nursing or criminology, it might omit, without loss, the section on psychosurgery. The clinician will want this book, as will the investigator wishing to keep abreast of laboratory activities throughout the world. Students should be cautioned to read the original works.

* * *

HALLUCINATIONS—Edited by Louis Jolyon West, M.D., Professor and Head, Department of Psychiatry, Neurology and Behavioral Sciences, University of Oklahoma Medical Center, Oklahoma City, Oklahoma. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 295 pages, $9.75.

It has been the habit of late, for some enterprising group of men or committee to call a conference in and around some area of unexplained phenomenology (isolation, dreams, consciousness, information, etc.), call together a group of "experts" from various fields (usually directly or indirectly associated with the nervous system but with devastating diversity) and pretend that they are talking about the same thing for several days. What is even more interesting is that they are usually the same group of men, talking about the same things, independent of what the actual topic of the conference happens to be. Marrazzi talks about the transsynaptic model, Heath about Taraxein, and Scheibels or similar ones about the magical reticular core, and the usual group of psychopharmacologists and an analyst or two. This, for the most part, constitutes the format for this book with the exception of some rather anecdotal accounts of sensory deprivation studies and some high flown theorizing by several authors including the editor.

If you haven't been around this kind of thing before, it could be an interesting experience. If you have picked up a volume like this in the past five or so years (and there have been many), then I have to tell you that here is another.

Arnold J. Mandell, M.D.

* * *

PROGRESS IN HEMATOLOGY—Volume III—Edited by Leandro M. Tocantins, M.D., with 25 contributors. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 384 pages, $16.50.

Volume III of this series is another successful attempt to survey some recent developments in hematology, particularly in the laboratory and investigative fields, in the past three years. The editor regretfully did not include the advances in the hemoglobinopathies.

In a lengthy paper on manifestations of radiologic exposure, in addition to short term exposure affecting the blood, there is a review of the relation of radiation to leukemia. Prankerd briefly outlines the normal chemistry of the erythrocyte and metabolic alterations in hereditary spherocytosis, elliptocytosis, glucose-6-phosphate dehydrogenase deficiency, paroxysmal nocturnal hemoglobinuria and congenital methemoglobinemia. Greenwalt reviews recent advances in blood grouping and their practical applications. Craddock describes the kinetics of granulocytes, lymphocytes and the leukemic cell. Dougherty and associates review hormonal control of lymphocyte production and destruction. Braunstein and Gall's paper on the cytologic and histochemical features of malignant lymphoma will be of particular interest to pathologists. The biologic activities and life of platelets are thoroughly covered in two papers. Sherry and his associates review fibrinolytic agents in thromboembolic disease. Waldenstrom describes various clinical hematologic disorders, particularly lymphoid, with disturbances of gamma globulin. There are sections on haptoglobin, current problems of bone marrow transplantation, avian leukemia, instruments for quantitatively recording the coagulation process, biologic activities and life of platelets in two papers and a lengthy discourse on protein fractions, especially albumin and metal binding proteins.

This volume fulfills its purpose in bringing up to date recent developments in the areas considered. It will be of interest particularly to hematologists, investigators and pathologists.

William F. Luttgens, M.D.

AGE-GROUPING METHODS IN DIPTERA OF MEDICAL IMPORTANCE—With Special Reference to Some Vectors of Malaria, World Health Organization Monograph Series No. 47—T. S. Detinova, Martsinovsky Institute of Medical Parasitology and Tropical Medicine, Ministry of Health, Moscow. (Translated into English) World Health Organization, Geneva, 1962—Distributed in the United States by Columbia University Press, International Documents Service, 2960 Broadway, New York 27. 216 pages, Clothbound, $5.25.

This monograph presents the detailed methods and findings of a highly complex series of entomological studies that have culminated in techniques for the accurate age grading of adult female mosquitoes, gnats and sand flies. The techniques are based on microscopic examination of the ovaries to observe physical changes associated with the taking of a blood-meal and subsequent maturation and deposition of eggs. In application to *Anopheles* mosquitoes a sample of a field population can now be age graded and for each female the number of previous blood-meals can be determined. Knowledge of the physiologic age of an individual vector and the age composition of a vector population is essential in the epidemiologic study of a disease or in estimating the effectiveness of control and eradication programs. These studies represent a major breakthrough in technique that has already proven to be invaluable in California in studies of the mosquito vectors of the viral encephalitides and the pest mosquitoes that are of public health importance.

The monograph is arranged in a series of nine chapters that take the reader through the Russian studies on application of the techniques to *Anopheles* mosquitoes and malaria. Techniques, interpretations, references and practical applications are considered in detail and the preface, foreword and an annex by other workers reinforce the values and implications of these techniques for the betterment of man's health status.

W. C. Reeves, Ph.D.

* * *

PROGRESS IN MEDICAL GENETICS—Volume II—Edited by Arthur G. Steinberg, Ph.D., Professor of Biology, Department of Biology, and Associate Professor of Human Genetics, Department of Preventive Medicine, Western Reserve University, Cleveland, Ohio; and Alexander G. Bearn, M.D., Associate Professor, The Rockefeller Institute; Physician, Hospital of the Rockefeller Institute, New York; Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 378 pages, $12.75.

This volume, and the earlier one in the series, stand to the annual bibliographic review of human genetics in the Journal of Chronic Diseases under Dr. V. McKusick's editorship as the series, Advances in Internal Medicine, stands to the Year Book of Medicine. A few topics have been selected for critical and speculative, as well as bibliographic, review.

The first three chapters deal with polymorphic systems in human serum and plasma, which have not been included in most recent reviews. A. G. Steinberg discusses the Gm and Inv groups, and H. Cleve and A. G. Bearn take up the group specific component of serum. The "phenotypes" of these systems are far removed from gross observation and are near the level of the primary gene product. The plasma transferrins, the third system and the one nearest clinical medicine, are discussed by E. R. Giblet. All the authors use an operational approach to introduce their subjects, which is helpful in such complex experimental settings. Gene frequencies are presented by all authors for a variety of racial groups. The important topic of the heterozygote's selective advantage is raised by each author, and perhaps too much hope is offered for an early solution. When the phenotype itself is so hard to recognize, the heterozygote's advantage may be equally covert. It is worth remembering that while the discovery of new polymorphic systems proceeds apace, the heterozygote's mathematically necessary advantage, a point of decisive medical importance, has been established in only one or possibly two instances.

C. R. Scriver's chapter on hereditary aminoacidurias is the longest in the book. It covers a wide range of physiological, biochemical and genetic data and makes the difficulties of technique and analysis explicit. For the discussion of specific aminoacidurias, Scriver uses the *ad hoc* classification of the conditions as overflow, renal or general metabolic. This field as perhaps no other in human genetics illustrates the hardship of working in biochemistry for genetic purposes above the level of the primary gene product in a mammal having untold avenues to maintaining some semblance of homeostasis and health.

S. Tokuda and R. D. Owen have contributed an interesting and largely speculative article on antibody synthesis, which contains an elaboration and second thoughts about the clonal selection theory of Burnet. H. R. Holman presents a summary of the evidence for familial predisposition to rheumatic diseases.

L. B. Russell and S. Gluecksohn-Waelsch in the next two chapters discuss the genetics of experimental mammals for the light they may lend human genetics. Russell gives a valuable detailed discussion of the origin of chromosomal aberrations and explains how inferences may be made of the point in meiosis or mitosis of the parents or progeny where the aberration arose. She also emphasizes the extent to which more markers and linkage groups would strengthen these inferences in human studies, where they remain largely as speculative as the heterozygote's advantage in polymorphic systems. Gluecksohn-Waelsch describes the variety of models of human genetic diseases in experimental mammals, which are currently known and, in her eyes, unfortunately ignored in medical research. J. Francois in the last chapter reviews part of the enormous number of genetic eye diseases.

The price of this book, and of most other symposia with necessarily short lives, is high.

* * *

EXPANDING GOALS OF GENETICS IN PSYCHIATRY—Anniversary Symposium of the Department of Medical Genetics, New York State Psychiatric Institute, October 27-28, 1961; and Proceedings of Sixth Annual Meeting of Eastern Psychiatric Research Association. Edited by Franz J. Kallmann, M.D., Chief of Psychiatric Research, Department of Medical Genetics, New York State Psychiatric Institute; Professor of Psychiatry, Columbia University, New York; with the assistance of L. Erlenmeyer-Kimling, Ph.D., E. V. Glanville, Ph.D., and J. D. Rainer, M.D. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 275 pages, $6.75.

With the increasing interest in genetic factors in disease, this book is a very timely one. It consists of a series of presentations given by an outstanding group of scientists at a symposium on Genetics in Psychiatry held in October of 1961 at the New York State Psychiatric Institute. The book is divided into five sections:

1. Progress in Behavioral and Psychiatric Genetics.
2. Progress in Basic Genetics.
3. Progress in Genetic Studies of Neurological Disorders, Deafness and Mental Deficiency.
4. Functions of a Medical Genetics Department in the Field of Mental Health, and
5. Testimonials and Awards.

Among the wide variety of topics covered in the book are the biochemistry and function of DNA, the molecular changes underlying mutation and gene action, the micromanipulation of chromosomes and the biochemical metabolic and clinical effects of mutated genes and disarranged chromosomes. There are contributions on the methodological problems arising in sampling design and in the investigation of genetic carriers and on genetic studies of a variety of clinical disorders.

The Symposium begins and ends with reviews of studies on the possible role of genetic factors in the etiology of mental illness and behavior disorders and on various demographic aspects of these conditions in the United States and elsewhere.

The book is in part a tribute to Dr. Kallman (the Editor), who has been working in the field of psychiatric genetics for the past 25 years against a background of disinterest in this area by most clinical psychiatrists. It highlights the dramatic recent advances in medical genetics, and augurs an increasing interest in the biological determinants of mental and emotional disorders.

It is highly recommended for all physicians who wish to keep abreast of what promises to be a major front in medical research in the years to come.

NORMAN Q. BRILL, M.D.

* * *

DR. MARY WALKER—The Little Lady in Pants—Charles McCool Snyder. Vantage Press, Inc., 120 W. 31st Street, New York 1, N. Y., 1962. 166 pages, $3.95.

This biographical book comes from the pen of a well known professional historian. While on a teaching assignment in Oswego, New York, Doctor Charles Snyder found himself in the birthplace of a Doctor Mary Walker, and the citizens of this community were still talking about this unusual person. This little known woman was news in the United States in the last half of the 1800's and the early 1900's as well as in England and France. She was not only a physician when women doctors were rare, but she also served in the Civil War and received the Congressional Medal of Honor for this service. During and following the war she was a tireless lecturer and worker for more comfortable and sanitary dress for women. She believed this consisted of a below-the-knee coatdress over pantaloons! Hence the title of the book.

Doctor Snyder has written delightfully of this lady who had tireless energy and will. Born into a family which not only permitted their daughters to have a higher education but actually encouraged them, she sought a medical training and obtained it.

This small book sparkles with stories of her trials and experiences as a physician and suffragette who spent more time campaigning and lecturing than she did practicing medicine. Because of her unorthodox attire she was always the center of attraction. She even had the temerity to wear this "outfit" to her own wedding!

Aside from the story of the central figure, the writer gives the reader insight into the political and cultural life of the period. Those who enjoy historical biographies will wish to add this book to their list.

* * *

SYNOPSIS OF ROENTGEN SIGNS—Isadore Meschan, M.D., Professor and Director of the Department of Radiology at the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina; formerly Professor and Head of the Department of Radiology at The University of Arkansas School of Medicine, Little Rock, Arkansas. With the assistance of R. M. F. Farrer-Meschan, M.B., B.S. (Melbourne, Australia), M.D., Research Associate, Department of Radiology, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina. W. B. Saunders Company, Philadelphia, Pa., 1962. 436 pages, 1488 illustrations on 465 figures, $11.00.

This is a synopsis of the author's larger textbook "Roentgen Signs and Clinical Diagnosis." It is so organized that each page serves as an individual outline unit, suitable for teaching or review.

Normal radiographic anatomy is first reviewed, followed by a short section on technical aspects of examination. A summary of pathological features pertinent to radiography is presented.

There are 10 chapters on disorders and diseases of bone, two on disorders of the heart and 14 on other systems. The chapters on the osseous system are particularly complete and commendable. In the cardiovascular section, acquired valvular disease and pericarditis are not considered, but of course are covered in the larger text first mentioned.

In essence, this is an elementary monograph, particularly suitable for the medical student and potentially useful as a study aid for practitioners in many fields of medicine. There are numerous reproductions of roentgenograms, anatomic diagrams and line drawings. Appended to each chapter is a series of questions suitable for review and examination. The author is Professor and Director of the Department of Radiology at Bowman Gray School of Medicine in North Carolina.

L. HENRY GARLAND, M.D.

* * *

ARTIFICIAL RESPIRATION—Theory and Applications—By 15 Authors. Edited by James L. Whittenberger, M.D., James Stevens Simmons Professor of Public Health, Harvard School of Public Health, Boston, Mass. Hoeber Medical Division, Harper & Row, Publishers, Inc., 49 East Thirty-Third Street, New York 16, N. Y., 1962. 276 pages, $10.00.

The text in three parts—the physiology, techniques and clinical artificial respiration—has been assembled using the most outstanding groups of workers in the field of resuscitation during the past 10 to 12 years. The authors have epitomized most effectively the tremendous amount of data produced during this time and clearly define the current concepts of resuscitative requirements demanded of the rescuer in all emergency parameters. Nowhere else can such authoritative data be quickly available for rapid perusal. This book is a "must" as a teaching aid and reference for the instructor and pupil. This includes—in addition to all physicians, dentists and nurses—para-medical rescuers, firemen, policemen, lifeguards, athletic trainers, coaches, etc. Many of these para-medical rescuers have basic training in respiratory emergencies but require upgrading and modernizing in their methods.

The chapter covering closed chest cardiac resuscitation codifies the procedure but requires expansion to cover its present status in rescue and disaster medicine.

ROBERT O. BAUER, M.D.

* * *

FUNDAMENTALS OF VOLUNTARY HEALTH CARE—Edited by George B. de Huszar. The Caxton Printers, Ltd., Caldwell, Idaho, 1962. 457 pages, $6.00.

This ambitious volume is described as a "source book" of nongovernmental means of achieving satisfactory health care for the American people. It consists of two main parts: the first one deals with basic themes such as the nature of charity, the lengthening shadow of government, the importance of individualism, the problem of true social engineering and the inherent difficulties of bureaucratic management. The second deals with specific forms of government coverage, voluntary sickness service, major medical expense insurance, and allied topics.

Opitz observes that in 1902 the U. S. government owned, exclusive of land, about 3 per cent of the total national wealth; in 1922 government ownership amounted to 9 per cent; in 1946, 22 per cent, and in 1954, 27 per cent. The reader can project this curve to the time when the government will own most of the total national wealth, unless the relentless process is tempered or reversed.

One of the large factors tending to perpetuate the process is of course the expansion of government into business—the substitution of bureaucratic management for profit management. Bureaucratic management is required to comply with detailed rules and regulations, but has no standard of performance as does profit management. The citizen believes that bureaucratic management is wasteful, inefficient, slow and dominated by red tape; it kills ambition, destroys initiative and the incentive to do more than the minimum required. The unsolved problem is how to give it a standard of measurement by which it could be compared with conventional profit management. The vast number of enterprises in which the State is now involved, either as a manufacturer or distributor is summarized on page 77. It may give the reader pause.

Jewkes quotes Edmond Burke, "The people never give up their liberties but under some delusion." He discusses the fashions in economic thinking, fashions that spread like wildfire in certain communities and during certain decades. Unfortunately, this particular chapter was written in 1948, and is therefore of historic rather than other value. He observes "The obstacles encountered in establishing economic facts and in creating an understanding of economic cause and effect may well lead to a cynical, if not completely fatalistic, attitude."

Hayek discusses in considerable detail the illusion of Social Security. His chapter alone is worth the price of the book. Likewise, Lutz on Public Health, Lees on the economics of health services, and Campbell on voluntary health insurance in the United States.

The United States is almost the only large nation which does not have some form of governmental sickness service for the people at large. Yet, under its voluntary system, it has made greater progress in the application of medical and sanitary science than any other country. Physicians in teaching centers like San Francisco know the large number of foreign doctors who come to study our methods and our programs. But Mr. Cohen and his colleagues in Washington would undo this.

The excellent chapter by Orr is a reprint of his outstanding article in the *Journal of the American Medical Association* on the grave problems resulting from the medical profession's adoption of governmental medicine via the Veterans Administration program. This expands relentlessly despite the fact that at no time in our history has the average person had as great an ability to pay for his medical care as he has at the present time. Our death rate is declining steadily. But unfortunately our demands for the fountain of youth are climbing equally relentlessly.

In the final chapter, Lee comments on the curious paradox of contemporary philosophy that a man should spend what he earns for his pleasures rather than for what he needs. The funds are available for very comprehensive medical care if the public were disposed to spend them. Nevertheless, good medical care continues to be a personal, complicated and "unpredictably precarious service." It cannot be standardized or mass produced. No schedule of fees or catalogue of prices can ever measure its actual values.

More than two dozen authors make up the team which is responsible for this book. It is not light reading, but I believe it is informative for many Public Health workers, Social Service workers, *and* practicing physicians.

L. HENRY GARLAND, M.D.

* * *

ERYTHROPOIESIS—Edited by Leon O. Jacobson, M.D., and Margot Doyle, Ph.D. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 399 pages, $6.75.

These are the Proceedings of a Conference on Erythropoietin and Regulation of Erythropoiesis held in San Francisco, January 21-23, 1962, sponsored by the Hematology Study Section of the United States Public Health Service and the University of Chicago. Almost 100 investigators contributed to the 46 papers and discussion which have been carefully edited. The material is divided into ten sections, including erythropoietin assay methods, chemistry, sites of formation, metabolic fate, relation to anemia, polycythemia and renal abnormalities. The kinetics of erythropoiesis and cellular response to this erythropoietic stimulatory factor in the blood form additional sections. This material will be of interest to investigators in the field, as well as clinical hematologists, and should be available in medical libraries as the current reference source on this erythropoietic hormone. The promptness with which these Proceedings have appeared is commendable.

WILLIAM F. LUTTGENS, M.D.

* * *

SURGERY OF THE CHEST—Edited by John H. Gibbon, Jr., M.D., Samuel D. Gross Professor of Surgery and Chairman of the Department of Surgery, The Jefferson Medical College. With the Collaboration of 35 Authorities. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1962. 902 pages, $27.00.

This attractively-bound volume is the most comprehensive work available on surgery of the chest. The 35 highly qualified contributing authors have succeeded in covering the various facets of surgery within the chest with thoroughness and enough technical detail to be helpful to the surgeon encountering such problems. Emphasis is also placed on the diagnostic tests and preoperative evaluation of surgical candidates. The text is amply supplemented with carefully selected and meaningful illustrative material.

In addition to the admirable coverage given the more conventional areas of thoracic surgery (i.e., pulmonary, esophageal, etc.), eight additional chapters deal with cardiac surgery, primarily open heart techniques. The physiology and problems of whole body perfusion, prosthetic heart valves, pace-makers, etc., are also discussed.

If any criticism were to be made of this volume, it would be that a few of the authors rely too heavily perhaps on their own experiences and opinions. In all other respects, this book is a valuable contribution to the surgical literature, and is recommended enthusiastically to all thoracic surgeons.

* * *

TRAUMA TO NERVES IN LIMBS—James E. Bateman, M.D., F.R.C.S.(C); illustrated by Louise Gordon. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1962. 453 pages, $14.00.

During World War II interest in peripheral nerve injuries was reviewed, and first class monographs on the problem appeared in the English language. No one of these, however, was able to combine in a single volume the material that Dr. Bateman has brought together. The treatment is complete and readable.

The material is presented in a logical way and includes a discussion of the embryology and developmental defects of peripheral nerves; the anatomy of peripheral nerves, including the surgical anatomy; the important considerations of the physiology of nerve repair; pathology of nerve injury; a consideration of the mechanisms of nerve injury and their diagnosis; and the use of electrodiagnostic tests. Operative indications, the techniques of repair, the bridging of gaps, the use of grafts, and the special problems of individual nerves are given appropriate emphasis. Neural lesions that result from unusual mechanisms including tumors, radiation, and iatrogenic causes are treated. An excellent discussion of the relationship of neural injury to bone and vascular injury is presented.

Practical information on substitution and trick movements, the method of applying electrical stimulation and its value, the rehabilitatory approach, and the use of appropriate splints are well illustrated. All make this book a most useful reference work.

Each major chapter is made complete by including additional reference material. The index is quite satisfactory. One is hard pressed to find fault with this work although a few misprints and mildly ambiguous comments can be alluded to but these do not detract from the otherwise fine presentation. The illustrations are clear and well reproduced and useful to illustrate the points specified in the text.

I would consider this to be the best book available on the market today on injuries of the peripheral nerves and their treatment.

W. Eugene Stern, M.D.

* * *

PRACTICAL ELECTROCARDIOGRAPHY—Third Edition—Henry J. L. Marriott, M.D., Director of Medical Education and Director of the Cardiology Center, Tampa General Hospital (Tampa, Florida); formerly Associate Professor of Medicine, University of Maryland; and Chief, Electrocardiograph Department, Mercy Hospital, Baltimore. The Williams and Wilkins Company, Baltimore 2, Md., 1962. 274 pages, $5.50.

Practical Electrocardiography by Marriott, in its Third Edition, remains a simple, direct, and fundamental text emphasizing clinical application. The very brief explanation of vector forces is inadequate to give the beginner the vector concept of electrocardiographic interpretation.

The electrocardiographic illustrations are excellent. For the clinician who wishes to sharpen his interpretation of electrocardiograms by reading patterns, this is an excellent text. For the student who wishes to learn fundamental electrocardiography through a thorough understanding of vector gradients, the text is inadequate. This book presents no features which distinguish it from many other books on this subject.

George C. Griffith, M.D.

* * *

RADIOACTIVE ISOTOPES IN MEDICINE AND BIOLOGY—Basic Physics and Instrumentation—Second Edition—Edith H. Quimby, Sc.D., Professor Emeritus of Radiology, College of Physicians and Surgeons, Columbia University, New York, and Sergei Feitelberg, M.D., Director, Andre Meyer Department of Physics, The Mount Sinai Hospital; Assistant Clinical Professor of Radiology (Physics), College of Physicians and Surgeons, Columbia University. Lea & Febiger, Washington Square, Philadelphia 6, Pa., 1963. 343 pages, $8.00.

Fission occurs in books as well as atoms. This work began, in its first edition, as a single volume on isotopes in medicine. One of the authors, Solomon Silver, has already published a separate volume on clinical applications, and now we have what is technically Volume I of the series, devoted to Basic Physics and Instrumentation.

First let me say that this is an excellent exposition of the subject in every way—well-written, thorough coverage, clear illustrations. Then let me add that fission has its dangers, in books as well as atoms. There will be a strong temptation, now that the "hard stuff" is segregated off, for clinicians to dip only into the volume on medical applications and leave the basic materials to physicists and those few physicians responsible for organizing and running isotope laboratories. This would be a mistake, for Drs. Quimby and Feitelberg have masterfully clarified topics of vital interest to all physicians, such as Radiation Hazards and Their Avoidance (including a few sane paragraphs on radioactive fallout), and Basic Measurements with Radiation Detectors.

Dozens of books are now in print dealing with radioactive isotopes in medicine. This one, and its companion volume, are among the very best.

Jerold M. Lowenstein, M.D.

A STUDY OF PSYCHOPHYSICAL METHODS FOR RELIEF OF CHILDBIRTH PAIN—C. Lee Buxton, M.D., Department of Obstetrics and Gynecology, Yale University School of Medicine. W. B. Saunders Company, Philadelphia, Pa., 1962. 116 pages, $4.75.

To many an obstetrician, the term childbirth suggests a group of determined young women diligently performing ritualistic gymnastics under the direction of a zealous obstetrician and subsequently delivering in a rather primitive like fashion.

It is perhaps inevitable that Dr. Buxton, the successor to the chair of Herbert Thoms, one of America's pioneers in training programs for childbirth, should turn his attention to this matter. The view that Buxton presents in "A Study of Psychophysical Methods," is a balanced and rational survey of this subject which is too often approached on an emotional basis.

The author presents the results of a year long odyssey through some of the obstetrical clinics of Great Britain and the Continent, where childbirth preparation programs are in vogue. In successive chapters Buxton considers problems such as the nature of pain, the value of visual aids, the efficacy of exercises and relaxation, the contribution of the trained midwife, and the role of the husband. In the opinion of this reviewer this volume makes several contributions towards a proper understanding of childbirth preparation programs, by the profession.

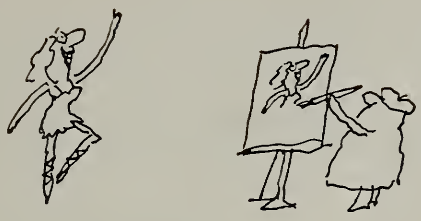
Of most obvious value is the general survey of the programs used in various clinics. The reader learns that the techniques of Natural Childbirth, or Childbirth-without-fear, as pioneered by Read and Heardman in England, by Jacobson in New York, and by Goodrich and Thoms in New Haven, consist of a combination of group physical training in exercises, relaxation and psychological conditioning. The emphasis in these programs may vary from the psychological approach in the Latin countries to the increased emphasis on gymnastics in Scandinavia. The author also describes the Autogene training of the German clinics, which attempts to develop controlled relaxation. Distinguished from this is the Childbirth-without-pain (Psychoprophylaxis) approach of the Russian and French clinicians, in which conditioned reflexes are supposedly developed by Pavlovian techniques in an attempt to block painful sensations. Dr. Buxton admits that an objective investigation of these various programs is impossible. In his comparative study he only reports impressions of the techniques themselves, and he discloses no outstanding advantages or personal preference for any one method.

A second offering of this essay is its re-emphasis that prepared patients need not deliver without the benefit of analgesic or anesthetic agents.

The third, and probably the most pertinent contribution in this book is the concept that support should be given to the parturient during her labor. In a tone reminiscent of Thoms, the author points out that the obstetrician's interest in and understanding of the woman in labor is probably the most important part of the preparation program. In this age of dramatic progress in the scientific basis of medical practice, with new developments in analgesic and anesthetic medications and techniques, it is encouraging to see Dr. Buxton emphasize our need of comparable advances in the art of medicine. To the parturient in childbirth the obstetrician can give nothing of more value than his time, understanding and sympathy.

This well prepared monograph has a particularly useful bibliography of the original American and European references. It can be thoroughly recommended to all members of the profession "to whom the woman about to become a mother, entrusts her life."

Lawrence D. Longo, M.D.



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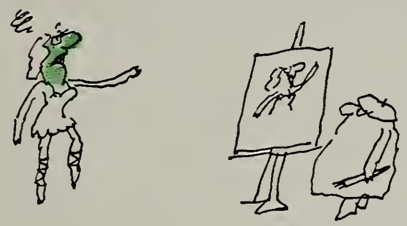

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*Scal, J. C.: Eye Ear Nose & Throat Month. 38:738 (Sept.) 1959.

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Many Factors Involved in Preventing Hay Fever

Many other factors besides ragweed are responsible for hay fever symptoms in the fall season, according to Dr. Herbert J. Rinkel, Kansas City, Mo., allergist.

There could be more success in preventing hay fever if it were not considered to be merely a ragweed problem from August to the first frost, he said.

Writing in a scientific journal of the American Medical Association, Dr. Rinkel said in many communities, five to six pollen groups reach their peak at the peak of the ragweed season. In addition, he said, mold spores, house dust, and temperature reactions to inhalants and foods are involved.

Although ragweed is the most important primary pollen for most hay fever patients in mid-America, he said, there are very few persons whose sole allergy is ragweed.

In 33 years of practice, Dr. Rinkel said he encountered only 3 patients who were allergic only to ragweed. The rest of the patients were either sensitive to various fall pollinating plants or were also sensitive to molds and foods.

Elaborating on the other factors involved, Dr. Rinkel said the ragweed season coincides with the peak of the fall silk season. Silk allergy does not concern many patients, he said, but it can be very important in selected cases.

During late August and September, he said, the peak of Alternaria mold spores also occurs. The molds continue through to mid-October and in many years to mid-November, he said.

The fall is also marked by a change in dust sensitivity, Dr. Rinkel said. Late in the hay fever season, he said, houses are frequently closed and furnaces started. Two nights with furnaces on herald the dust season, he said.

Another factor is the mid-September pollination of the plant Chenopodium Album. There is no doubt that this is a cause of hay fever symptoms, he said.

Many inhalant sensitive persons are quite susceptible when temperatures drop, he said, and the early cool autumn evenings may increase their symptoms.

Temperature reactions associated with foods will develop in the latter part of the hay fever season, he said. The critical temperature varies throughout the country but is about 50 degrees in Kansas City.

A further complication is the start of the smut season, he said. Smuts are fungus forms derived from grains and grasses. Spores of these fungi are in the air during the summer, but significant concentrations appear in the fall, just at the end of the various primary pollen seasons, he said.

In the northern portion of the United States, he said, the smut season reaches its peak in early October and continues until about the first of January. In the southern portion, he said, smuts are more

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apt to occur in association with grasses during the summer months.

Although some cases may be caused by an unknown factor, Dr. Rinkel concluded, if all the known factors are carefully evaluated and testing for allergies is complete, there will be very little unexplained hay fever left.

The article appeared in the February *Archives of Otolaryngology.*

Thalidomide Causes Mouse Deformities

Congenital abnormalities have been produced by thalidomide in a strain of test mice, it was reported in the January 12 *Journal of the American Medical Association.*

"When thalidomide was given to 62 pregnant mice, seven litters contained embryos with congenital abnormalities," Joseph A. DiPaolo, Ph.D., Roswell Park Memorial Institute, Buffalo, N. Y., said: "No abnormalities were found in control groups."

The incidence of abnormalities may prove to be greater when further studies are completed, he said.

The number of embryos in the affected litters was less than usual for the strain of mouse used, he said, and thalidomide-treated animals had more abortions than animals in the control groups.

The embryo abnormalities included phocomelia, a congenital malformation that involves nondevelopment of the long bones of one or more of the extremities, Dr. DiPaolo said. An increased incidence of phocomelia has been reported in human newborns when the sedative was taken in early pregnancy.

Difficulties have been encountered in producing such defects with thalidomide in laboratory animals, Dr. DiPaolo pointed out. For example, similar studies with rats produced no malformations, he said.

Further animal experiments are expected to permit a detailed study of what produces the malformations, he said.

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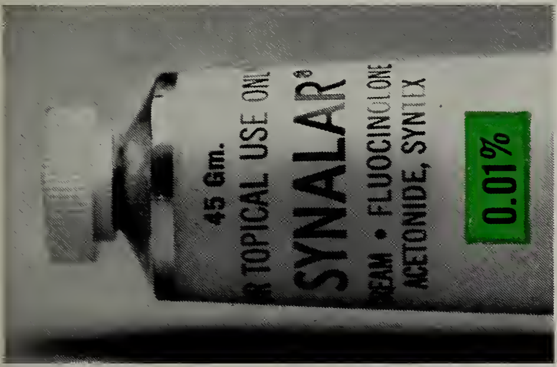

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1. Cahn, M. M., and Levy, E. J.: J. New Drugs 1:262, 1961.
2. Robinson, H. M., Jr.; Raskin, J., and Dunseath, W. J. R.: Bull. U. Maryland Med. School 47:21, 1962.

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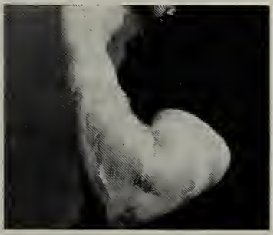

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REFERENCES AND REVIEWS

Failure of Activated Trypsin to Cause Experimental Hemorrhagic Pancreatitis—R. E. Mathews and N. T. McPhedran. Canad. J. Surg., 6:102 (Jan.) 1963.

In an effort to elucidate the role of activated trypsin in the pathogenesis of acute hemorrhagic pancreatitis (AHP), a series of 15 dogs were divided into 3 groups which received (1) 75,000 units of trypsin intraductally with both ducts ligated at a pressure not greater than 40 cm. of water, (2) 75,000 units of trypsin infused interstitially, (3) 150,000 units of trypsin infused interstitially with both ducts ligated. No lethal AHP occurred. A review of the literature on the relationship of trypsin to AHP is presented. It is concluded that active trypsin alone does not suffice to initiate AHP.

* * *

Two Years' Experience in Treatment of Burns in a Private General Hospital—G. E. Collentine, J. D. Conway, W. Woloschek, and B. Waisbren. Wisconsin Med. J., 61:511 (Oct.) 1962.

A special facility for the care of burns was opened in August, 1959. The purpose of this report is to review the experience of the first 2 years. Major departures from routine theapy were (1) total exposure treatment of all burns, (2) unusually lage doses of parenteral antibiotics, (3) extensive use of sharp debridement in the hydrotherapy tank without anesthetics, and (4) "medical debridement" with cotton pledgets soaked in solutions of antibiotic mixtures designed to combat common surface invaders. Results were inconclusive, but the practicality of such a facility and a team approach to burn care have been affirmed.

* * *

Intravenous Tolbutamide and Plasma Insulin-Like Activity in Probable "Prediabetics"—W. P. U. Jackson and P. Keller, Diabetes, 11:138 (supp.) 1962.

The results of this preliminary report suggest that the intravenous tolbutamide response may be abnormal in some prediabetic subjects. The plasma insulin-like activity may be rather high in the same people, and is raised further by tolbutamide. This is consistent with the concept of large and probably overactive islets of Langerhans in the prediabetic phase.

* * *

Changing Pattern in Causes of Death in Pulmonary Tuberculosis—F. S. Jenney and A. C. Cohen, Dis. Chest, 43:62 (Jan.) 1963.

The authors indicate that not only has the tuberculosis death rate been greatly reduced by chemotherapy, but also the character of the disease has been changed, and the cause of death altered. Findings at autopsy of tuberculous patients treated by chemotherapy indicate that in one-third of them the disease was healed, and that only 15 per cent had succumbed to progressive tuberculosis. Tuberculous patients who receive adequate treatment rarely die from tuberculosis. The most common causes of death among tuberculous patients are now related to nontuberculous disease.

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Chairman Elected By A.M.A. Council

Dr. J. Arnold Bargen, senior consultant and head of the Section of Gastroenterology at Scott and White Clinic, Temple, Texas, has been elected chairman of the Council on Scientific Assembly of the American Medical Association, it was announced.

Dr. Bargen, 68, succeeds Dr. Samuel P. Newman, Denver, who retired January 1 after serving 11 years on the council.

The nine-member council is responsible for the scientific programs at both the annual and clinical meetings.

Before joining the Scott and White Clinic in June, 1961, Dr. Bargen served 37 years with the Mayo Clinic, Rochester, Minn. During his long career in medicine, Dr. Bargen has held many offices, including the presidency of the Minnesota State Medical Association, 1957, and membership in the A.M.A. House of Delegates from 1948 to 1958. He received Minnesota's Distinguished Service Award in 1959.

In accepting the chairmanship, Dr. Bargen said, "The scientific program and the exhibits at A.M.A. meetings provide an up-to-date educational stage for today's physician who must cope with the double problem of managing a busy practice and keeping abreast of a host of changes in medicine—changes in basic knowledge, in diagnostic techniques and in treatment."

"By pooling their knowledge, experiences and discoveries at A.M.A. meetings," he said, "physicians unite in a common bond of knowledge of the healing art, thereby helping their patients in the alleviation of human suffering."

Trichinosis Still Appears In U. S., Mainly in South

Trichinosis, a disease caused by eating pork infected with the parasite Trichinella spiralis, continues to occur although its cause and prevention are well understood, according to the *Journal of the American Medical Association.*

A principal source of trichinosis is raw garbage fed to hogs. The disease can be prevented by cooking uncured pork at least half an hour per pound.

"Nevertheless, trichinosis continues to appear in the United States, especially in the South," an editorial in the February 2 *Journal* said. "Why this should be so is a mystery, unless pigs are still eating raw garbage and housewives are still serving underdone pork."

There were 306 cases of trichinosis reported in 1961 and 160 in 1960, the editorial pointed out. While these figures seem to indicate that the disease is uncommon, it said, all of the cases may not have been reported.

Physicians were urged to be on the lookout for the disease because successful treatment depends upon early diagnosis.

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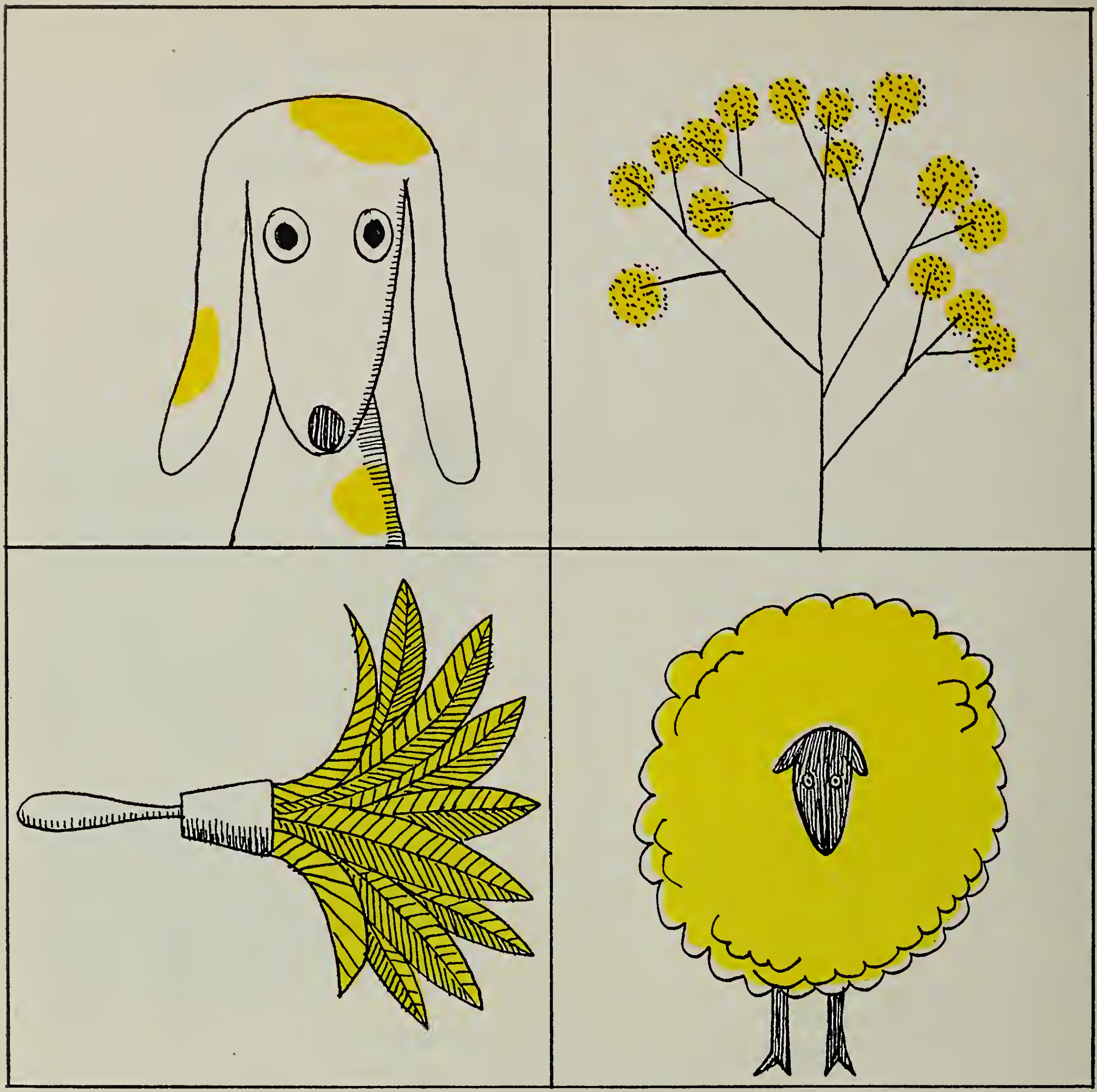

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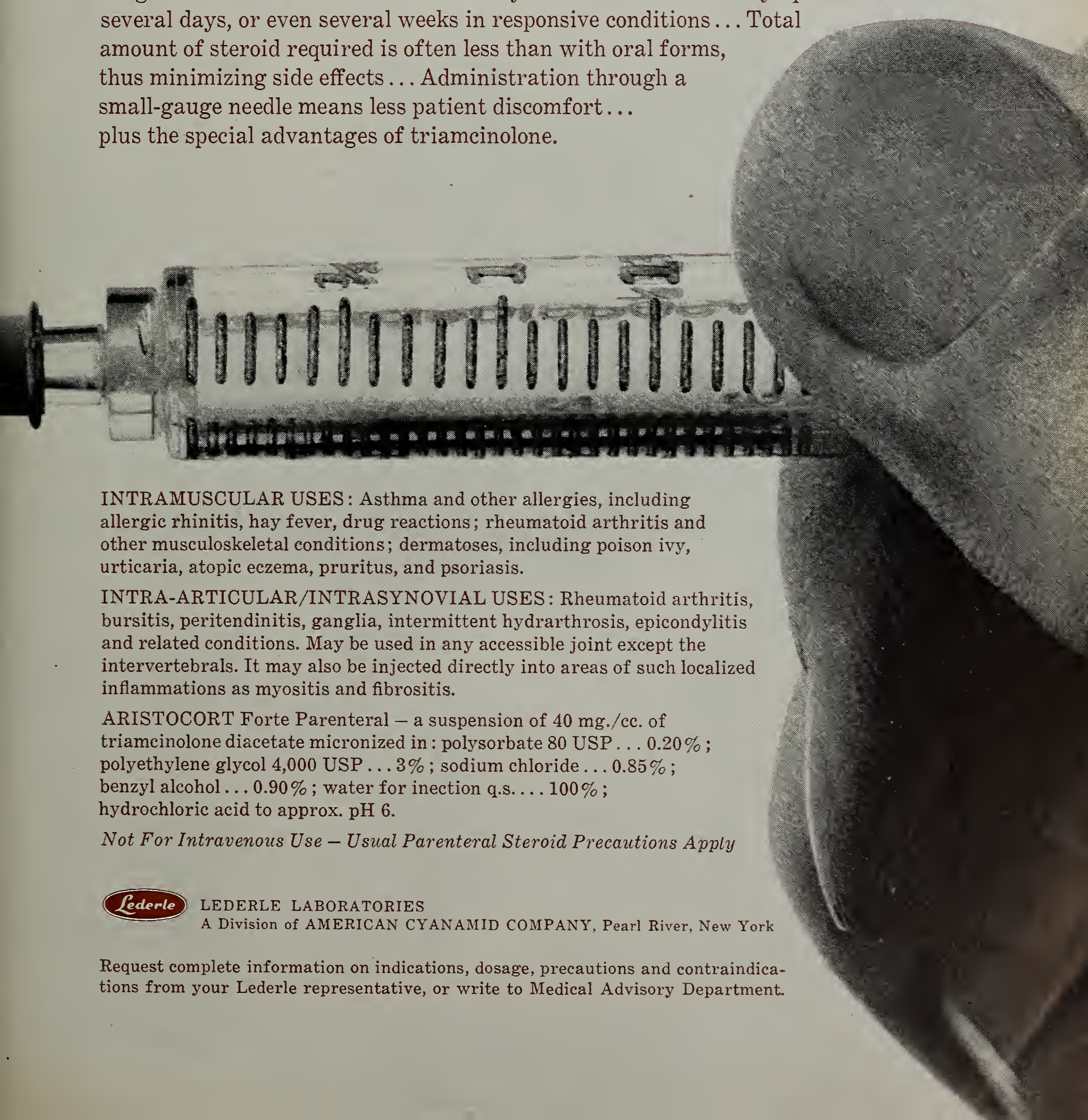

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Century-Old Ulcer Theory Backed By New Evidence

New evidence supporting a 100-year-old theory that abnormalities of the blood vessels are somehow involved in the occurrence of peptic ulcer was reported in the March 2 *Journal of the American Medical Association.*

A study by University of Iowa researchers revealed a higher incidence of certain blood vessel formations of the lips among persons with ulcers of the stomach and duodenum than in those without ulcer.

Peptic ulcer is an inflammation of the lining of the stomach or duodenum, the first part of the small intestine. Ulcers occur more often in men than women and are found more often in the duodenum than the stomach.

The study involved 427 hospital patients, including 339 men and 88 women, according to the *Journal* report. Of the 427, 101 had an ulcer or a history of an ulcer.

The patients were examined for three types of vascular formations visible to the naked eye and found inside the lips or under the tongue—the microcherry or small red dot, the glomerulus, a convolution of blood vessels, and the venous lake, a dilated portion of vein, or blow-out.

In addition to a greater frequency of these formations among persons with ulcer or a history of ulcer, the researchers also found:

—An increasing frequency with age.

—Patients with ulcer appeared to develop the formations earlier in life and in greater number than those without ulcer.

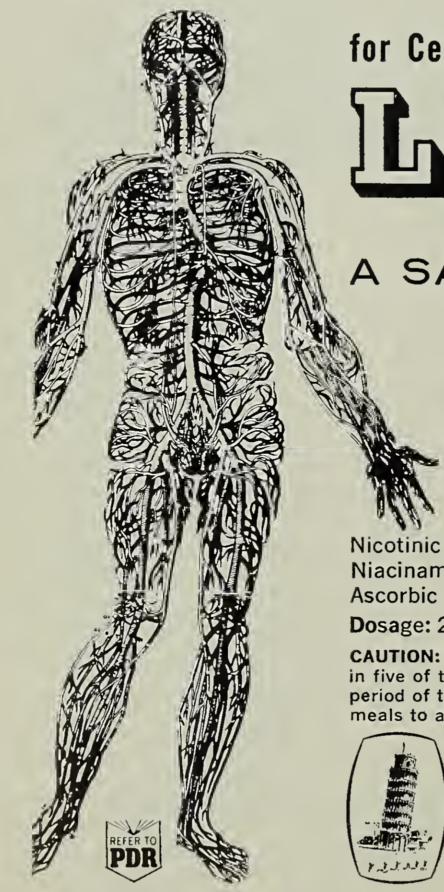
—A greater frequency in men than in women.

—A direct relationship between the number of vascular formations and the incidence of ulcer.

This evidence tends to support the theory that abnormalities of the blood vessels—present in other parts of the body—in some manner lead to impairment of the circulation of the stomach and duodenum and render this area vulnerable to the corrosive action of the digestive juices, the researchers concluded.

This theory was advanced more than 100 years ago, they said, and has since been reaffirmed by many investigators. At present, however, ulcers are generally believed to be caused by an oversecretion of stomach juices as a result of nervous and hormonal factors, they said.

The report was authored by John A. Gius, M.D., Don E. Boyle, B.A., Donald D. Castle, B.A., and Ralph H. Congdon, B.A., department of surgery, University of Iowa College of Medicine and the University Hospital, Iowa City, Iowa.



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CAUTION: W. B. PARSON, Jr., JAMA, July 30, 1960. Volume 173, No. 13. Demonstrated side reaction in five of the patients when using substantial dosage of Nicotinic Acid. 3.0 to 7.5 grams daily over a period of two and one-half years. Suggestion was made that tablets be taken with an anti-acid or with meals to avoid high acidity in long term therapy. See PDR-page 548.

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Respiratory Disease Is Fast Rising Disabler

Chronic lung disease is the fastest rising cause of total disability in the United States today, according to Dr. Richard W. Stone, New York City.

Social Security data indicate that worker disability allowances for chronic lung disease are surpassed in number only by those for heart disease due to hardening of the arteries, he said in an article in the January *Archives of Environmental Health*, published by the American Medical Association.

In men, Dr. Stone said, lung cancer and chronic respiratory disease, which includes bronchitis, pneumonia and emphysema, are rising at "an alarming rate." In 1950, he said, the combined death rate of these diseases in men was 23.5 deaths per 100,000, whereas, in 1959, it had risen to 44 deaths per 100,000.

Up to the age of 40, men and women have about the same number of deaths and these are of low incidence, he said. By age 50, three times the number of men die from chronic respiratory diseases as do women, and by age 60 the difference is of the order of 7 times greater for men, he said. In men, there has been a 100-fold increase between ages 35 and 65, whereas, in women, the increase has been only 10-fold, he said.

It is not known whether these differences are due to intrinsic sex differences, or if they are environmental, Dr. Stone said.

The problem presents a rising threat upon which industry, voluntary health agencies, government, and academic bodies should plan an assault, he said.

Dr. Stone is medical director of the New York Telephone Company.

Encouraging Report on Cancer of Thyroid

Encouraging results were reported recently among patients with cancer of the thyroid treated with radioactive iodine following surgery.

Follow-up examinations of 152 patients showed that 73 were apparently free of the disease an average of five years after treatment, Drs. Thomas P. Haynie, Mohamed M. Nofal and William H. Beierwaltes, University of Michigan, Ann Arbor, Mich., said.

Writing in the February 2 *Journal of the American Medical Association,* they said, it appears at present that adequate surgery followed by radioactive iodine therapy may well free a substantial number of properly selected patients of their cancer.

In addition, they said, there had been no recurrences among patients who had been free of symptoms for three years after therapy.

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References: 1. Calloway, N. O.: Article to be published. 2. Raddin, J. B., and Dowell, L. B.: Amer. J. Gastroent., 37:24-40 (January) 1962.

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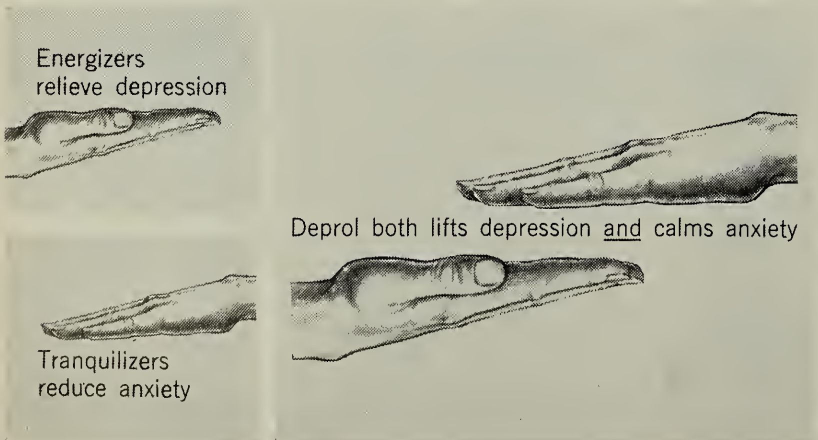

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1. Hodges, F. T.: *GP* 14:86, Nov., 1956.
2. Guild, B. T.: *Arch. Dermat.* 51:391, June, 1945.

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A.M.A. Grants $20,000 to Recruit Nurses

The American Medical Association has announced a grant of $20,000 for 1963 to the national student nurse recruitment program.

Dr. George M. Fister, A.M.A. president, and Mrs. Lucille Petrey Leone, president of the National League for Nursing, which administers the recruitment program, made the joint announcement.

The $20,000 grant represents a doubling of A.M.A.'s annual contribution to the recruitment program. Dr. Fister said this was due to the mounting need for nursing personnel.

Mrs. Leone said a recent survey of schools shows that 1962 admissions probably would total 51,000 for schools of professional nursing—approximately the same number admitted in 1961. For schools of practical nursing, admission probably will total 27,000—a sharp increase over the 25,000 of a year ago.

Mrs. Leone said that while nursing continues to attract larger groups of students each year, the rise in admissions is not enough to keep pace with the growth in population and the demands for skilled personnel able to cope with advances in medical care or scientific equipment used in patient care.

In addition to the National League for Nursing, other sponsoring organizations for the recruitment program include the American Nurses' Association and the American Hospital Association.

Short Hospital Stay for Nervous Breakdown

A person who has a nervous breakdown today may be hospitalized for only three to six weeks.

This relatively short hospital stay is part of the treatment program for acute psychiatric conditions as conceived by the Langley Porter Neuropsychiatric Institute at the University of California Medical Center, San Francisco.

"Modern treatment methods have given the physician an opportunity to handle the vast majority of acute conditions in a matter of weeks without incurring the disabling side effects of prolonged hospitalization," Drs. Jurgen Ruesch, Carroll Brodsky and Ames Fischer of the Institute wrote in the February *Archives of General Psychiatry*, published by the American Medical Association.

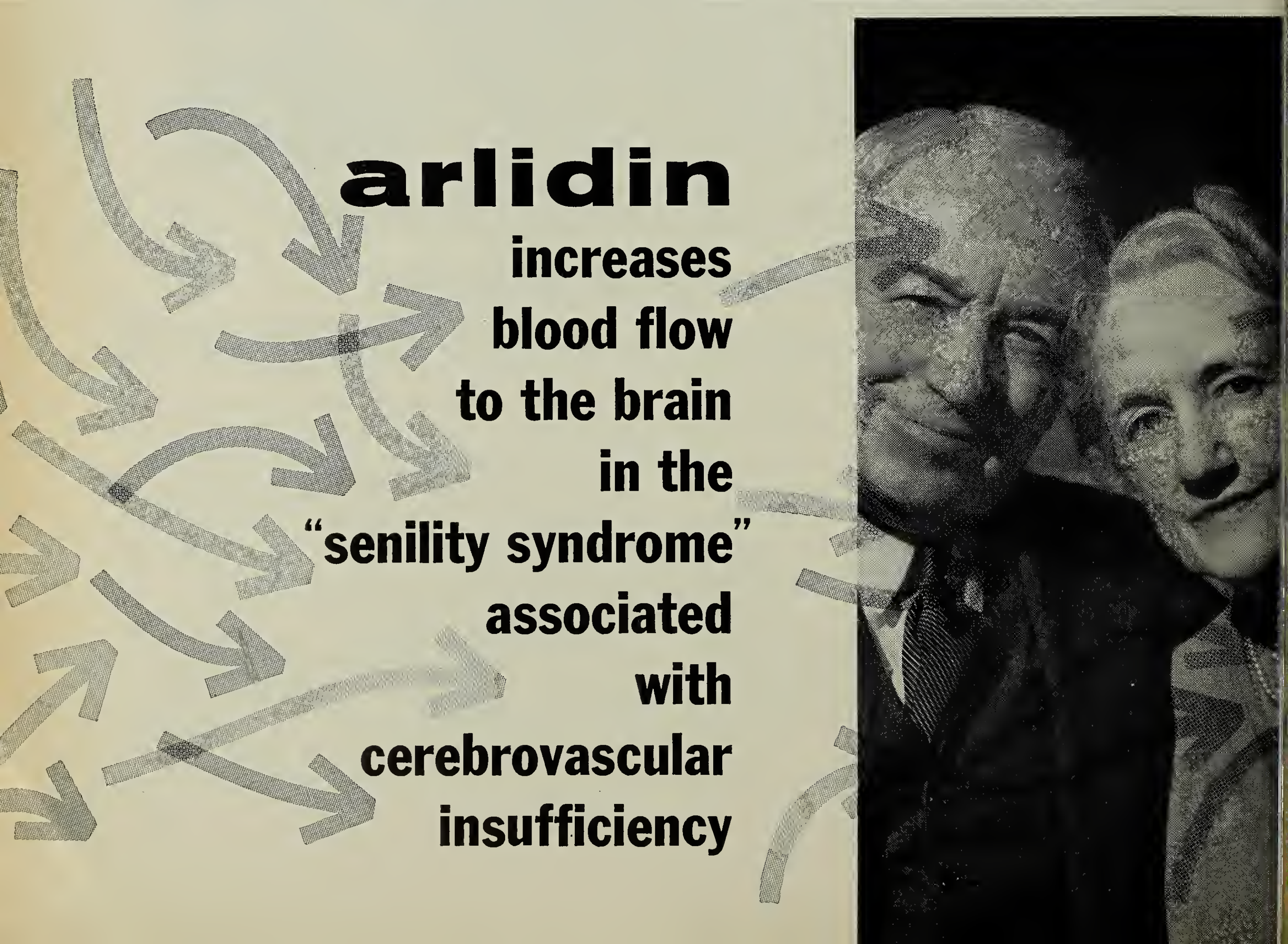
Patients need hospital care only when their behavior is acutely disordered, they said.

"Thus short-term hospitalization but long-term follow-up has become the rule," they said.

The patient and his relatives are informed upon admission that his stay in the hospital will be limited to a few weeks, the authors said.

"This conveys to the relatives the idea that the patient cannot be abandoned, and it impresses the patient with the futility of finding a permanent form of adaptation to the hospital," they said.

"When the patient leaves the hospital, both he



and his relatives are informed that he is still a sick individual and needs further care."

After the patient is discharged, they said, he is urged to revisit the hospital regularly. The physician who admitted and treated the patient continues to follow him for three to six months, they said. Later, follow-up visits to the hospital may be made, they said, and in some cases a doctor-nurse team attempts to facilitate the patient's adaptation outside the hospital.

After-care treatment must be provided for all discharged schizophrenic patients, the authors said. This type of patient, they said, "cannot be discharged and left to his own devices, floating in a large city, unrelated and without friends."

He must be assured of human relations under supervision and treatment for a long period of time, they said.

Treatment was aimed at eliminating the socially disruptive and individually conflictual behavior of the patient by means of drugs, electroshock therapy, psychotherapy and social planning, the authors said.

The report on the Institute's program was based on a series of 219 patients, 146 women and 73 men ranging from 12 to 74 years of age and representing all social classes and educational levels.

Diagnostically, the authors said, they fell into four groups—48 depressives, 89 schizophrenics, 74 psychoneurotic and personality disorders, and 8 brain disorders.

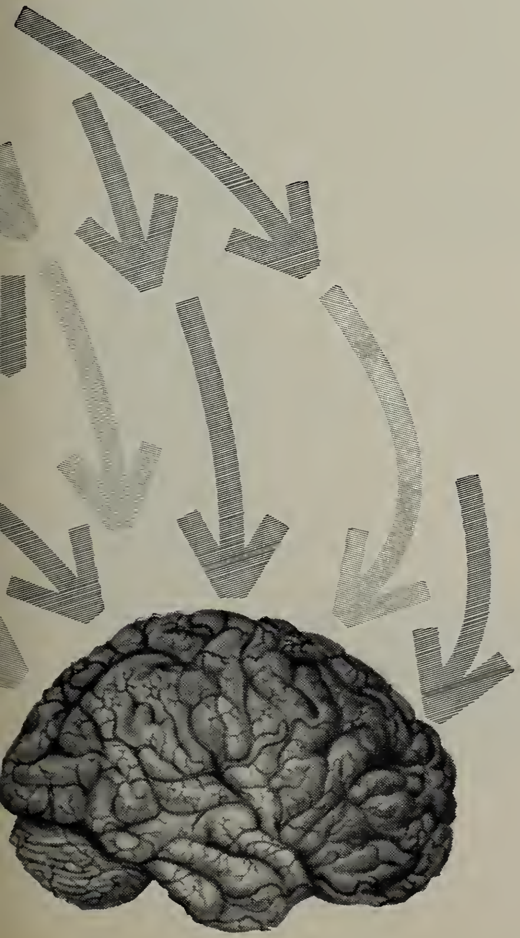
The average hospital stay for psychoneurotic disorders and cases of brain disease was about three weeks, for depressives five weeks, and for schizophrenics six weeks, the physicians reported. Only 7 of the 219 required rehospitalization, they said, and only 4 of the 219 had to be sent to the state hospital for prolonged care rather than being returned to the community.

An evaluation of each patient six months after discharge revealed that the social adaption of the majority at least equaled their pre-breakdown condition, the authors said.

"Inasmuch as our findings are consistent with the results obtained by other investigators, the conclusion is warranted that this approach can serve as an economical and effective model for the treatment of acute disorders in the many public and private centers which are currently being proposed and activated throughout the United States," they said.

SPONTANEOUS PNEUMOTHORAX MANAGEMENT BY THORACOSTOMY AND SUCTION—M. W. Wolcott, W. A. Shaver, and W. D. Jennings, Dis. Chest, 43:78 (Jan.) 1963.

Management of 65 patients with spontaneous pneumothorax by tube thoracostomy with low suction is reported. Open thoracotomy was necessary in only six. Conservative management is urged as it has yielded good results with minimal disability and loss of time.



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references: 1. Madow, L.: Penn. M. J. 62:861, June 1959. 2. Stieglitz, E. J.: Geriatric Medicine, ed. 2, Philadelphia, Saunders, 1949 p. 274. 3. Winsor, T., et al.: Amer. J. Med. Sciences 239:594, May 1960. 4. Eisenberg, S.: ibid, July 1960.

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Hormonal Treatment of Disseminated Cancer of The Female Breast

GILBERT S. GORDAN, *M.D., Ph.D.*, WILLIAM P. GRAHAM III, *M.D.*,
LEON GOLDMAN, *M.D.*, ROSE PAPAC, *M.D.*, GLENN E. SHELINE, *M.D., Ph.D.*,
JEROME VAETH, *M.D.*, and JOSEPH WITT, *M.D.*, San Francisco

• 1. The University of California Medical Center at San Francisco is participating in a nationwide cooperative study attempting to improve hormonal therapy of disseminated breast cancer. A prospective protocol is followed in which the antitumor efficacy of an investigational compound is compared with that of a reference standard of known efficacy. Known variables (menopausal age and site of most significant metastasis) are randomized to distribute similar patients into experimental and control groups. Assignment of the therapeutic agent is made at random to avoid bias, and where feasible, neither patient nor investigator knows which compound is given.

2. Primary hormonal therapy of objectively progressing disseminated breast cancer yields objective regressions in approximately 22 per cent of patients treated with any of the following: testosterone propionate, 2-alpha methyldihydrotestosterone propionate (a derivative which produces less virilization) and oral diethylstilbestrol. The average duration of regression is 10 months.

3. After primary hormonal therapy has ceased to be effective, secondary hormonal therapy produces fewer than 12 per cent objective regressions when conventional estrogens, androgens, corticoids, or surgical hypophysectomy are employed. The rate rises to 19-26 per cent if corticoids are combined with triiodothyronine, or if the less virilizing androgen, 2-alpha methyldihydrotestosterone propionate is used instead of other androgens. Surprisingly, hydrocortisone 30 mg. plus triiodothyronine 50 micrograms—an innocuous combination—proved as effective as doses producing Cushing's phenomena.

In our aging population, disseminated cancer of the breast is a grave public health hazard. Its frequency increases directly with age: by age 70, three cases are found in every thousand women each year.[4] This year 54,000 women in this country will have breast cancer, and 23,000 will die as a result.[8] Approximately 60 per cent of women with breast cancer will die with distant metastasis within 10 to 25 years after diagnosis.[8] At the stage of widespread metastases, hormones, endocrine ablative procedures and chemotherapy may still cause the disease to regress, but only in a minority of patients. For individual lesions (ulcerated areas, painful metastatic lesions of bone or impending fractures) radiotherapy may be effective in a high percentage of cases.

In an attempt to improve hormonal therapy of advanced breast cancer, 31 institutions have joined in a nationwide cooperative study under the aus-

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Submitted July 12, 1962.

pices of the Cancer Chemotherapy National Service Center of the National Cancer Institute.[14] In the six years since this study has been under way, considerable valuable data have been obtained under rigidly controlled conditions in which the objective antitumor efficacy of 53 steroids or related compounds has been prospectively studied in 2,831 controlled, objectively evaluated, statistically randomized, reviewed cases; and an additional 18 compounds are now under study. These studies have established the essentially equal antitumor efficacy of intramuscular testosterone propionate and 2-alpha methyldihydrotestosterone propionate (Masterone® and Drolban®), oral diethylstilbestrol and unesterified 2-alpha methyldihydrotestosterone (Dromostanolone®), oral 9-alpha bromo 11 ketoprogesterone (Braxerone®) and oral 17-alpha ethinyl and 17-alpha methyl 19-nortestosterone (Norlutin®; Norethindrone®) and have disproved earlier claims of the superiority of orally administered fluoxymesterone (Halotestin,® Ora-Testryl,® Ultandren®). In all cases these agents were used as primary hormonal therapy—that is, as the first hormonal treatment administered to postmenopausal women with objectively progressing breast cancer. The place of one compound, delta 1-testololactone, unique in that it has no hormonal or other undesirable activity, remains uncertain. It produced regressions in 30 per cent of women treated at one insituttion,[15] but in only 6 per cent of those treated at another.[14] Because of this discrepancy, this potentially important compound is under further study. In addition to antitumor efficacy, each compound is studied for its other effects. It is now established that 2-alpha methyldihydrotestosterone propionate is less androgenic but no less effective than testosterone propionate in the treatment of advanced breast cancer. On the other hand, 9-alpha bromo 11 ketoprogesterone may produce serious retention of salt and water. 17-alpha methyl 19-nortestosterone, although a potent antitumor agent, has been discarded because of its dangerous hepatic toxicity.

VALUE OF THE STUDY

In our opinion, the program provides a valuable service for the patient, the referring physician, the community and the investigator. The patient is treated with agents selected to give the best chance of regression under controlled circumstances, permitting objective evaluation. Inert placebo controls are not used. In each study the compound under investigation is compared with an active standard: testosterone propionate, diethylstilbestrol, unesterified 2-alpha methyldihydrotestosterone or 2-alpha methyldihydrotestosterone propionate. For chronically ill patients the study is of particular value since it provides free expert medical care, diagnostic roentgenologic and laboratory services, medication, and the hope of a good result. Even if objective regression is not obtained, subjective improvement with lessening of pain and of invalidism is frequently obtained. The community benefits, not only through the service rendered its members and the experience gained by the investigating group, but also through the active interest stimulated in the problem of advanced breast cancer and its treatment.

Each investigator has the opportunity of conducting original studies of interest to him and his group. For example, we have had the opportunity to study calcium and phosphorus metabolism in patients with advanced breast cancer, both before and during various treatments.[5] These studies have shown that urinary calcium excretion is not quantitatively related to progression or regression of breast cancer,[5] that breast cancer raises blood calcium and phosphorus levels regardless of the presence or absence of osteolytic metastases, and that these phenomena are best explained as ascribable to the elaboration by breast cancer of an osteolytic substance which has actions similar to those of vitamin D.[6,10] The hormones used in the treatment of breast cancer also exert specific effects on calcium and phosphorus metabolism. Corticoids cause renal wasting of calcium and phosphorus, while androgens inhibit osteolysis, probably by a direct effect upon bone.[6]

In addition to the study of primary hormonal therapy, the program also provides for evaluation of secondary hormonal therapy after primary therapy has failed or has ceased to maintain a regression. Patients who have previously been treated with androgens are now treated with a choice of estrogen or corticoid selected at random without bias. Patients who have previously been treated with estrogens are now treated with an androgen or a corticoid.

MECHANICS OF THE STUDY

In all studies carried out by the Cooperative Breast Cancer Study Group the known variables are randomized, such as sites of metastases: (1) local (breast, skin, regional lymph nodes), (2) osseous, and (3) visceral (lungs, liver and brain). If more than one site is involved, the patient's prognosis and responsiveness are functions of the most significant site (visceral>osseous>local). Each patient is classified as: (1) less than one year past cessation of menses; (2) one to five years past the menopause; (3) five to ten years past the menopause; or (4) more than ten years postmenopausal. Four age groups multiplied by three sites of most significant metastasis provide 12 classifications which must be randomly distributed, both in the group receiving

TABLE 1.—*Primary Hormonal Therapy for Disseminated Breast Cancer*

	University of California		National	
Treatment with	Regressions per Number Treated	Per Cent	Regressions per Number Treated	Per Cent
Testosterone propionate 100 mg. intramuscularly 3 times a week	18 of 72	25	116 of 520	22
Fluoxymesterone 40 mg. daily by mouth	3 of 21	14	16 of 106	15
2-alpha methyldihydrotestosterone propionate 100 mg. intramuscularly 3 times a week	4 of 23	17	25 of 96	26
Diethylstilbestrol 15 mg. per day	5 of 28*	18	Not available	

*Three of these patients have not been reviewed.

the experimental and the group receiving the reference compound.

Whenever feasible and desirable, primary and secondary studies are done by the double-blind technique to avoid bias on the part of the investigator. In all cases photographs of lesions, caliper measurements and x-ray films are reviewed by two extramural investigators. Regression is defined as significant shrinkage of measurable lesions and calcification of osseous lesions while no new lesions appear. In our studies, regression is counted only if concurred in by the referees. This rigid prospective protocol provides objective, controlled, randomized, reviewed data on antitumor efficacy of hormonal agents under conditions designed to eliminate bias and to equalize in the control and experimental groups those variables due to age of patient or to site of metastasis.

RESULTS OF PRIMARY HORMONAL THERAPY

The University of California Medical Center, at San Francisco, its Out-Patient Department and its affiliated hospitals, the H. C. Moffitt Hospital, University of California Hospital and San Francisco General Hospital, have been participating in the nationwide study since July 1, 1957. In the five years that we have been participating in this study, 324 clinic and private patients have been screened for possible participation. Three compounds have been studied for antitumor efficacy as primary hormonal therapy. The first study was a comparison of fluoxymesterone 40 mg. a day by mouth with testosterone propionate 100 mg. intramuscularly three times a week.[12] The second was a comparison, using the double-blind technique, of the antitumor efficacy and androgenicity of 2-alpha methyldihydrotestosterone propionate and of testosterone propionate, each given in doses of 100 mg. intramuscularly three times a week.[18] The third study, only recently completed, is a cooperative study* in which the antitumor efficacy of stilbestrol 15 mg. daily was compared with that of testosterone propionate 100 mg. intramuscularly three times a week. The last study was undertaken because of the need for prospective, randomized comparison in view of previous reports based on selected, unreviewed cases in which estrogen appeared to be more effective than androgen.[2] The results of these three studies are shown in Table 1. The antitumor efficacy of fluoxymesterone in our study, while numerically less than that of testosterone propionate, was not significantly so because of the small number of patients.[12] 2-alpha methyldihydrotestosterone propionate was, in this series,[18] and in those reported by Blackburn and Childs[1] and by Goldenberg and Hayes,[9] as effective as testosterone propionate. In all three studies, it was less androgenic than testosterone propionate, which uniformly produced pronounced virilization, particularly unpleasant for women in the last months of their lives.

The combined data of the eight institutions comparing the antitumor efficacy of testosterone propionate with that of stilbestrol show no significant overall difference between the two compounds, but stilbestrol is less effective in women less than five years past the menopause.† The difference between our results and those previously reported by the Therapeutic Trials Committee of the American Medical Association is, for the most part, attributable to the fact that in that pioneer study the estrogen-treated women averaged 20 years older than those treated with androgens.[2] The importance of prospective randomization, control and review is clearly shown by these contrasting results.

Currently, we are comparing by the double-blind technique the antitumor efficacy of two compounds administered by mouth: 7-alpha 17-alpha dimethyltestosterone 10 mg. daily (an extremely potent anabolic steroid) and the reference compound, unesterified 2-alpha methyldihydrotestosterone 150 mg. daily.

SECONDARY HORMONAL THERAPY

When there is no response to primary hormonal therapy administered for six to twelve weeks or if, after an initial regression, the disease again becomes

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*Also participating in this study are the State University of New York Downstate Medical Center; University of Pennsylvania; Yale University; University of Wisconsin; Albany Medical College; the Mayo Clinic; and the University of Minnesota.

†In our own series testosterone propionate produced regressions in 5 of 25 women (20 per cent), and 5 of 28 patients responded to stilbestrol (18 per cent).

TABLE 2.—*Results of Secondary Hormonal Therapy*

A. Hypophysectomy + hydrocortisone 30 mg. per day + T_3 50 μg per day

	Time Past Menopause				
Dominant Lesion	<1 Year	1-5 Years	6-10 Years	10+ Years	Total with Regression
Breast	0/ 0	0/ 1	0/ 0	0/ 0	0/ 1
Osseous	0/ 0	1/ 3	0/ 0	0/ 2	1/ 5
Visceral	0/ 4	1/ 8	1/ 4	0/ 5	2/21
Total	0/ 4	2/12	1/ 4	0/ 7	3/27
Per cent	....	....	....	....	11

B. Small dose corticoid: hydrocortisone 30 mg. per day + T_3 50 μg per day

	Time Past Menopause				
Dominant Lesion	<1 Year	1-5 Years	6-10 Years	10+ Years	Total with Regression
Breast	0/ 0	0/ 0	0/ 0	1/ 2	1/ 2
Osseous	1/ 2	0/ 2	0/ 0	1/ 3	2/ 7
Visceral	0/ 2	1/ 3	0/ 1	1/ 8	2/14
Total	1/ 4	1/ 5	0/ 1	3/13	5/23
Per cent	....	....	....	....	22

C. Large dose corticoid prednisone 30 mg. per day + T_3 50 μg per day

	Time Past Menopause				
Dominant Lesion	<1 Year	1-5 Years	6-10 Years	10+ Years	Total with Regression
Breast	0/ 1	1/ 1	0/ 0	1/ 2	2/ 4
Osseous	0/ 0	0/ 2	0/ 0	2/ 6	2/ 8
Visceral	0/ 4	1/12	2/ 3	3/ 7	6/26
Total	0/ 5	2/15	2/ 3	6/15	10/38
Per cent	....	....	....	....	26

D. Estrogens

	Time Past Menopause				
Dominant Lesion	<1 Year	1-5 Years	6-10 Years	10+ Years	Total with Regression
Breast	0/ 2	0/ 2	0/ 0	1/ 1	1/ 5
Osseous	0/ 2	0/ 4	0/ 1	0/ 6	0/13
Visceral	0/ 2	0/ 9	0/ 4	1/13	1/28
Total	0/ 6	0/15	0/ 5	2/20	2/46
Per cent	....	....	....	....	4

E. Androgen derivatives other than 2-alpha-methyldihydrotestosterone propionate

	Time Past Menopause				
Dominant Lesion	<1 Year	1-5 Years	6-10 Years	10+ Years	Total with Regression
Breast	0/ 0	0/ 1	0/ 1	0/ 2	0/ 4
Osseous	0/ 0	0/ 5	0/ 0	1/ 3	1/ 8
Visceral	0/ 1	0/ 4	0/ 1	1/ 4	1/10
Total	0/ 1	0/10	0/ 2	2/ 9	2/22
Per cent	....	....	....	....	9

F. 2-alpha-methyldihydrotestosterone propionate 100 mg. 3 times weekly

	Time Past Menopause				
Dominant Lesion	<1 Year	1-5 Years	6-10 Years	10+ Years	Total with Regression
Breast	0/ 0	0/ 1	0/ 0	0/ 0	0/ 1
Osseous	1/ 1	0/ 3	0/ 0	1/ 2	2/ 6
Visceral	0/ 3	1/ 4	1/ 3	1/ 9	3/19
Total	1/ 4	1/ 8	1/ 3	2/11	5/26
Per cent	....	....	....	....	19

G. Prednisone 30 mg. per day

	Time Past Menopause				
Dominant Lesion	<1 Year	1-5 Years	6-10 Years	10+ Years	Total with Regression
Breast	0/ 0	1/ 2	0/ 0	0/ 1	1/ 3
Osseous	0/ 1	0/ 3	0/ 1	0/ 1	0/ 6
Visceral	0/ 1	0/ 3	0/ 3	0/ 5	0/12
Total	0/ 8	1/ 8	0/ 4	0/ 7	1/21
Per cent	....	....	....	....	5

H. Primary androgen therapy

	Time Past Menopause				
Dominant Lesion	<1 Year	1-5 Years	6-10 Years	10+ Years	Total with Regression
Breast	0/ 5	1/ 2	0/ 2	2/ 7	3/16
Osseous	0/ 3	0/ 5	1/ 2	3/13	4/23
Visceral	0/ 5	3/16	0/ 9	10/22	13/52
Total	0/13	4/23	1/13	15/42	20/91
Per cent	....	....	....	....	22

TABLE 3.—*Comparison of Administrative and Ablative Therapy for Disseminated Breast Cancer*

Group (See Table 2)	Treatment	Regressions per Number Treated	Per Cent Regressions	Duration of Regressions (Months ± Standard Deviation)
A	Hypophysectomy + hydrocortisone 30 mg. + triiodothyronine 50 μg/per day	3 of 27	11	8.3 ± 2.3
B	Hydrocortisone 30 mg. + triiodothyronine 50 μg/per day	5 of 23	22	> 9.4 ± 1.5
C	Prednisone 30 mg. + triiodothyronine 50 μg/day	10 of 38	26	8.1 ± 1.8
D	Estrogens	2 of 46*	4	3.6+ and 10.9+
E	Androgen derivatives (other than 2-alpha methyldihydrotestosterone propionate)	2 of 22*	9	11.0 and 17.6
F	2-alpha methyldihydrotestosterone propionate, 100 mg. 3 times weekly	5 of 26*	19	7.9 ± 3.0
G	Prednisone 30 mg./day	1 of 21	5	6.0
H	Primary androgen therapy (Ref. 14+18)	20 of 91	22	10 ± 1.6

*Not all cases of these groups have been reviewed.

objectively progressive, the patient is a candidate for secondary hormonal therapy. In our experience subsequent administration of conventional estrogens (ethinyl estradiol 3.0 mg. or stilbestrol 15 mg. daily), androgens (methyltestosterone 200 mg. by mouth daily or fluoxymesterone 40 mg. by mouth daily), or prednisone 30 mg. by mouth daily, has proved disappointing in these patients (Table 3). Accordingly we departed from the secondary protocol studies for two years to evaluate other procedures which might yield higher regression rates when applied as a secondary hormonal therapy.

In many institutions hypophysectomy is reserved for patients who have previously responded favorably to castration or administrative hormonal therapy. This selection leads to regression rates varying from 22 to 45 per cent,[11,13] which are misleadingly optimistic if applied to the total population of patients with advanced breast cancer. In order to determine the usefulness of hypophysectomy for an unselected population of patients with advanced breast cancer regardless of response to previous hormonal therapy, and to ascertain whether regressions are to be attributed to a removal of pituitary factors or to the hormonal replacement therapy made necessary by hypophysectomy, a three-phase study was undertaken. We did not feel justified in giving hormonal replacement alone until we had ascertained whether larger doses of corticoids were effective, since previous reports indicated divergent regression rates varying from zero to 44 per cent.[16,17] Accordingly, the first phase of our study was the administration of prednisone 30 mg. daily plus triiodothyronine 50 mcg. daily.[7] This produced regressions in 10 of 38 patients (26 per cent) but the regressions were disappointing in certain respects. In only two of the 10 responsive patients was osseous healing observed, and in all patients this dose of prednisone resulted in severe Cushing's phenomena. Despite administration of antacids, gastric hemorrhages occurred in two patients, and two patients had perforation of duodenal ulcers.

Nonetheless, the gratifying regression rate of 26 per cent encouraged us to continue with the second phase of the study, namely, the administration of replacement doses of adrenocortical and thyroid hormones.[19] These were given as hydrocortisone 30 mg. and triiodothyronine 50 mcg. daily. Quite to our surprise, these produced five dramatic regressions in 23 patients (22 per cent). In three of these five, osteolytic lesions calcified. The medication was completely innocuous and no adverse phenomena were encountered. All patients reported a feeling of wellbeing. In contrast, 27 patients who received this replacement therapy as a supplement to hypophysectomy uniformly complained of weakness, and in nine of them diabetes insipidus was a problem. Only three of these 27 patients (11 per cent) obtained objective regressions from hypophysectomy. There was no correlation between response to hypophysectomy plus replacement therapy and response to previous hormonal therapy. Six of the 27 patients (22 per cent) died within 30 days of operation. As in previous reports[7,17] the two groups of patients treated with corticoids plus triiodothyronine obtained regressions regardless of their response to previously administered hormones.

TABLE 4.—*Minimal* Average Longevity of Patients with Disseminated Breast Cancer*

Initial Classification	Mean Longevity from Initial Evaluation (Months± Standard Deviation)
Local—(33 patients)	14.4±2.3
Osseous—(56 patients)	13.0±1.6
Visceral—(128 patients)	10.0±1.0

*All figures are minimal since some patients are still alive in each group.

Analysis of the results of secondary hormonal therapy according to age and site of most significant metastasis shows that the combination of T_3 and corticoids, both in the large and small dose, and treatment with 2-alpha methyldihydrotestosterone propionate also produces a significant, albeit small response in the most unfavorable group—women less than five years past the menopause (Table 2). The superiority of this treatment to conventional secondary hormonal therapy is shown not only by the increased regression rate, but also by the decreased incidence of adverse reactions.

In an additional study 26 patients were treated with 2-alpha methyldihydrotestosterone propionate 100 mg. intramuscularly three times a week as secondary hormonal therapy. Five of the 26 obtained regressions (19 per cent). Thus, in these studies, secondary hormonal therapy produced regression rates similar to those obtained with primary hormonal therapy and with less undesirable effects than are produced by conventional hormonal therapy. That the triiodothyronine plays a role is suggested by the discrepancy between the 22 per cent regression rate observed in our patients treated with hydrocortisone plus triiodothyronine and the complete lack of regressions obtained by Dao[3] in a group of patients treated with cortisone 37.5 mg. daily alone.

The duration of regressions is statistically similar in all age groups regardless of the therapy (Table 3). Those patients whose metastatic disease is limited to the breast and regional lymph nodes have a slightly longer survival than those whose disease involves bone or viscera (Table 4).

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Each case in the present study was reviewed by two or more of the following extramural referees, to whom we express our appreciation: Drs. Harry F. Bisel, Charles M. Blackburn, George C. Escher, Robert A. Huseby, Robert G. Ravdin, and Albert Segaloff. Dr. Edwin B. Boldrey kindly permitted us to include data from two of his patients.

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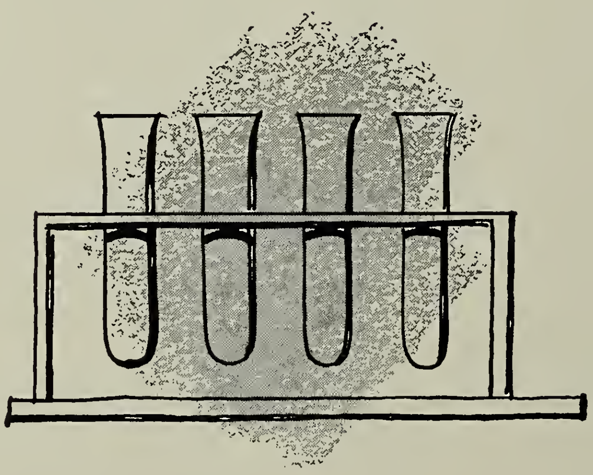

Sputum for Cytologic Examination

A Simple Method for Obtaining Specimens from Respiratory Passages

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SPUTUM CYTOLOGY is becoming increasingly important as a tool in the early diagnosis of lung cancer, but in order to obtain reliable cytological results a specimen raised by a deep cough is necessary. Since many patients are unable spontaneously to cough up the kind that is needed, several methods to induce the raising of a suitable specimen have been developed. These include the saline-propylene glycol technique of Bickerman,[2] the sulfur dioxide technique,[1] and a variety of other inhalation procedures.[4]

The results of the examination of induced sputum specimens compare favorably with those of good spontaneously produced specimens, and it appears that any method which induces the production of an adequate amount of sputum from the lower respiratory passages can be applied successfully.[3] Therefore, a method requiring only simple, easily available equipment offers advantages for use in a physician's office and in smaller laboratories.

The equipment used by us for aerosol induction of sputum consists of a Croupaire®* room humidifier which is fitted with a conical aluminum foil mouthpiece. The mouthpiece is easily made by forming a cone from double aluminum foil (18 inches wide) and fastening the large end over the vapor outlet with a rubber band. The screws holding the bottom of the humidifier are permanently removed so that the bottom can be separated for cleaning. The angle of the mouthpiece can be adjusted to the patient's height by simply bending the foil cone. (See Figure 1.) While the production of

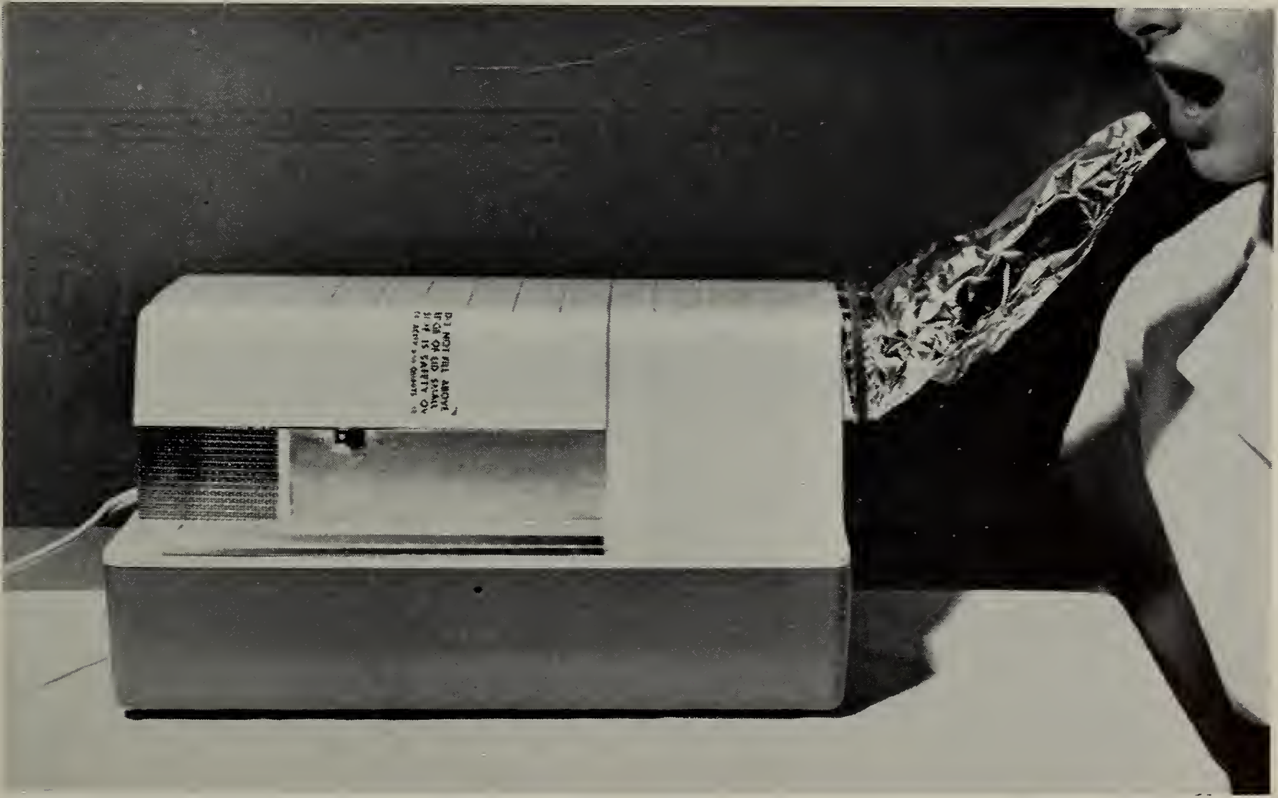

Figure 1.—Croupaire® humidifier, fitted with mouthpiece made of aluminum foil, as used for inspiration of aerosol to induce raising of sputum suitable for cytologic examination.

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*Croupaire model No. 66, Air-Shields, Inc., Hatboro, Pennsylvania. This machine has no glass parts to break, no fine nozzles to clog, no parts to sterilize, no heating elements. It is simple to use, can be set up quickly and is easy to clean.

sputum of the kind needed can be induced without it, the mouthpiece prevents contamination of the inner parts of the humidifier, and it is disposable. Periodic cultures of the humidifier have not grown pathogenic organisms.

The solution used in the humidifier is that recommended by Bickerman: 15 per cent saline solution and 20 per cent propylene glycol, mixed well in equal amounts. While the solution is not heated as it is in most commercially available nebulizers, the vapor produced was observed to cause good cough reflexes in all patients and in asymptomatic persons on whom it was used, and no persisting evidence of bronchial irritation or other side effects were noted.

With the cone 3 to 5 inches from his open mouth, the patient breathes the aerosol, continuing until cough is evoked—not more than 15 and usually in less than 5 minutes. As a precaution, only half the concentration of saline as well as of glycol is used in patients with emphysema or other severe respiratory disease.

The specimens obtained following inspiration of this material were of good quality, with many histiocytes and respiratory epithelial cells being observed on microscopic examination. Most of the patients had been unable to produce a suitable specimen of sputum spontaneously.

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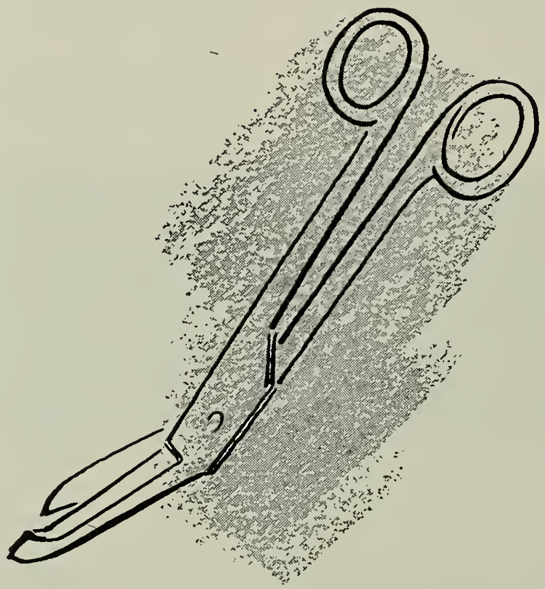

Non-Toxic Goiter Treatment With l-Triiodothyronine and l-Thyroxine

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• Twenty-one patients with goiters—four diffuse and 17 nodular—were treated with l-triiodothyronine and l-thyroxine in doses to tolerance. The four diffuse goiters were barely palpable at the end of the treatment. The average dose of l-triiodothyronine required was 100 mcg. per day. The average dose of l-thyroxine was 0.3 mg. per day. Of the 17 multinodular goiters, 11 showed at least a 50 per cent reduction in size. The average dose of l-triiodothyronine used was 125 mcg. In six cases the gland did not change in size; in three of the six the lesion was diagnosed, at operation, as microfollicular and macrofollicular colloid goiter.

Hypermetabolic symptoms may occur when doses of 100 mcg. or more of l-triiodothyronine are used.

Results indicated that suppressive therapy with thyroid hormone to tolerance is effective in diffuse goiters. It is only partially effective in the treatment of multinodular goiters. In the cases in which operation was done, no change in the basic histological goiter structure was observed.

SEVERAL REPORTS have appeared in the literature[1-15] on the use of thyroid preparations for the treatment of non-toxic goiter. Three studies[14-16] have dealt with the use of l-triiodothyronine.

Twenty-one patients of the University of Southern California Thyroid Clinic of the Los Angeles County General Hospital were studied. All patients, initially, had easily palpable goiters and no attempt was made to select patients on the basis of size and degree of multinodularity but none with solitary nodules were included. Determinations of serum protein-bound iodine (PBI), cholesterol levels and radioactive iodine uptake studies were performed initially in all cases. Basal metabolism rate was determined in a few. Patients showing thyrotoxicosis were excluded from the study.

The drug used at first was l-triiodothyronine (Trionine®, Cytomel®). The starting dose was 25 to 50 mcg., with increments of 25 mcg. to 50 mcg., at two to four-week intervals until a maximum dose of 200 mcg. was reached or thyrotoxicity appeared. (An exception was the patient in Case 7 (Table 5) who received up to 400 mcg. daily. At intervals of two to four weeks, the PBI and serum cholesterol levels were determined. The change in goiter size was subjectively estimated by correlating: (1) Palpation of the gland; (2) neck circumference measurement; and (3) direct measurement of goiter dimensions with the use of obstetrical calipers.

The goiter size was arbitrarily classified according to the estimated weight of the gland, as follows:

0	20 to 30 grams, or normal size thyroid
1+	35 to 60 grams
2+	60 to 120 grams
3+	120 to 250 grams
4+	250 grams or greater

The goiter was regarded as *diffuse* if the entire gland was enlarged without considerable irregularity of the structure, and as *nodular* if conspicuous nodules were present.

After three months' therapy with l-triiodothyronine, the dose was gradually decreased to zero over a period of one or two months, while simultaneously starting l-thyroxine (Synthroid®) at 0.1 mg. dosage, with progressive increments up to 0.4 mg. daily, the patient being subsequently maintained on this drug alone. The total course of therapy varied from two months to 34 months.

Data on the sex and age of patients and the type of goiter are given in Table 1. It is of interest that patients in the group with diffuse enlargement were

TABLE 1.—*Data on Goiter Type and Sex and Age of Patients Treated with l-Triidothyronine and l-Thyroxine*

Goiter Type	Sex	No. of Cases	Age Groups (Years) 10-19	20-29	30-39	40-49	50-59	60 or Over
Diffuse ..	F	4	2	0	2	0	0	0
Multinodular	F	17	0	0	2	1	6	8

TABLE 2—*Goiter Size Before Treatment*

		Weight of Gland (Grams)				
		20-30	35-60	60-120	120-250	Over 250
		Classification of Gland				
Goiter Type	No. of Cases	0	1+	2+	3+	4+
Diffuse ..	4	0	2	2	0	0
Multinodular	17	0	2	7	4	4

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TABLE 3.—*Data on Treatment and Results in Four Cases of Diffuse Goiter*

		Before Treatment			On Treatment: l-triiodothyronine						
Case No.	Age	Goiter Size	Serum P.B.I. mcg.	Serum Chol. mg.	Dose mcg.	Goiter Size	P.B.I.[*]	Treatment Duration Months	Chol.[*] mcg.	l-thyroxine Dose mg.	Remarks
3	19	2+	6.3	145	25	1+	4.2	½	133	....	l-thyroxine not started due to shortness of follow-up
4	36	1+	4.0	....	75	0	2.2	1	195	0.2	Goiter remained small during 4 mos. of l-thyroxine therapy
5	37	1+	4.7	....	150	0	2.0	2	182	0.4	l-thyroxine stopped after 2½ mos. due to dyspnea
13	16	2+	7.2	202	150	0	4.9	2¼	155	0.4	Goiter remained small for 2 years without any treatment after 8 mos. l-thyroxine therapy

[*] P.B.I. and cholesterol values after indicated time of treatment to reach smallest goiter size.

TABLE 4.—*Data on Treatment and Results in 11 Cases of Multinodular Goiter Showing Decrease In Size*

		Before Treatment			On Treatment: l-triiodothyronine					
Case No.	Age	Goiter Size	P.B.I. (mcg.) Per Cent	Chol. (mg.) Per Cent	Dose mcg.	Goiter Size	P.B.I. Per Cent[*] mcg.	Treatment Duration Months	Chol. Per Cent[*] mg.	l-thyroxine Dose mg.
2	54	4+	6.5	332	100	3+	8.2[†]	2½	249	0.2[‡]
8	85	3+	3.9	320	100	2+	6 [†]	1	238	....
9	80	3+	5.4	291	25	2+	....	½	....	....
10	73	2+	6.2	300	75	1+	6.4[†]	4	302	0.2
11	60	2+	5.9	342	150	1+	3.6	1	315	....[‡]
12	57	2+	6.0	394	100	1+	3.8	4	260	....
14	37	2+	5.6	302	100	1+	3.5	4	250	0.2[‡]
15	55	3+	6.4	338	200	1+	3.3	4	275	0.3
17	50	2+	6.3	....	200	1+	3.9	2½	193	....
18	87	1+	8.0	270	200	0	4.0	6	255	0.2
20	44	3+	5.5	314	100	2+	3.6	1¾	268	....[‡]

[*] P.B.I. and cholesterol values after indicated time of treatment to reach smallest goiter size.

[†] Iodide contamination.

[‡] Operation performed. Pathologic diagnosis: Micro- and macrofollicular colloid goiter.

TABLE 5.—*Data on Six Cases of Multinodular Goiter in which Treatment Did Not Reduce Size of Lesion*

		Before Treatment			On Treatment—l-triiodothyronine				
Case No.	Age	Goiter Size	P.B.I. (mcg.) Per Cent	Chol. (mg.) Per Cent	Dose mcg.	P.B.I. Per Cent[*]	Chol. Per Cent[*]	Treatment Duration Months	Operation
1	68	4+	5.1	223	200	5.3	133	29	Not operated on, as patient had post-C.V.A. hemiplegia
6	38	2+	4.9	228	200	2.5	198	6	Micro-macro follicular colloid goiter
7	50	3+	3.5	312	400	1.0	158	19	(1) Chronic thyroiditis diffuse (2) Mixed micro-macro follicular goiter—left lobe
16	54	2+	4.8	217	150	2.3	214	6	Micro-macro follicular colloid goiter
19	85	1+	7.1	....	50	4.7	228	4	Refused
21	85	3+	9.0 B.E.I. 6.7	158	75	4.6	145	13	Refused

[*] P.B.I. and cholesterol values after indicated time of treatment to reach smallest goiter size.

from 16 to 37 years of age, those in the group with multinodular enlargement were all over 36.

Data on the size of the goiter before treatment are given in Table 2.

Fifteen (71 per cent) of the 21 patients had a significant decrease in goiter size (Tables 3 and 4). Eleven of the goiters that were reduced were multinodular and four were diffuse. Six patients, all with multinodular goiters, had no change in the gland size (Table 5). The average dose of l-triiodothyronine required to cause a maximum decrease in goiter size was 125 mcg. for the multinodular group and 100 mcg. for the diffuse group. Eight of the patients who showed significant reduction in goiter size were subsequently maintained on l-thyroxine, and the average dose utilized to maintain this reduction in size was 0.3 mg. The average duration of treatment required to accomplish a maximum reduction in goiter size was eight weeks for diffuse and 12 weeks for multinodular lesions.

Diffuse Goiter

The four patients with diffuse goiter all had a reduction in the size of the lesion (Table 3). Three of them (Cases 4, 5 and 13) had barely palpable thyroid tissue at the end of the treatment period. Case 3 had a 50 per cent reduction in goiter size in two weeks, but did not continue treatment. These findings agree with the observations of other investigators.[2,11]

Multinodular Goiter

Of the 17 patients with multinodular goiter, 11 had a perceptible reduction in size (Table 4). Four of these were operated upon. One of the four (Case 11) stopped treatment for six months and the gland became enlarged again to the pretreatment level during that time. In another (Case 14) suspicious cervical lymphadenopathy was observed. One patient (Case 20) complained of pressure symptoms even though the goiter was diminished, and one (Case 2) had thyroidectomy for cosmetic reasons. The pathological diagnosis in all four cases was microfollicular and macrofollicular colloid goiter.

In the six cases, all multinodular, in which treatment did not bring about a reduction in size, the average dose of l-triiodothyronine, administered in divided amounts daily, was 175 mcg. The six patients were referred for consideration of thyroidectomy, but only three (Cases 6, 7 and 16) had the operation. The others refused. The pathological diagnosis in Cases 6 and 16 was microfollicular and macrofollicular colloid goiter. In Case 7, chronic thyroiditis was noted in the right lobe and a microfollicular and macrofollicular colloid goiter in the left lobe. No carcinoma was detected.

The suppressive action of l-triiodothyronine was manifested by a decrease in the PBI in all but four cases, all of which were in the multinodular group. Similar changes in PBI levels were reported by other investigators[15] and served as a guide as to the effectiveness of the medication.

Hypermetabolic symptoms appeared in 12 of the patients in the present series when the dose of l-triiodothyronine was 100 mcg. or more.

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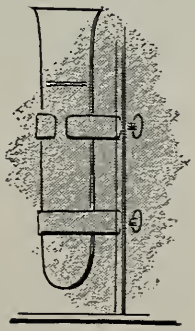

Direct Left Ventricular Puncture

RICHARD A. GILMAN, *M.D.*, ROBERT H. DeRIEMER, *M.D.*,
WILLIAM J. KUZMAN, *M.D.*, and JOHN J. KELLY, JR., *M.D.*, San Diego

• Left ventricular puncture with ventriculography was carried out in 150 cases over the past four years as an adjunct to cardiac catheterization. It proved to be a safe method of obtaining data on abnormalities of the heart. In addition, it permitted excellent visualization of the thoracic aorta and brachiocephalic vessels.

Inserting the needle at the subxiphoid and directing it through the apex of the right ventricle, into the septum and then the left ventricle lessened the hazard of injury to the left coronary artery or of entering the pleural cavity that is associated with direct apical puncture. Complications and failures were few.

THE DIRECT INTRODUCTION of radiopaque contrast material into the cardiac ventricles was described by Raboul and Racine[4] in 1933. Ponsdomenech and Beato Nunez[3] in 1951 elaborated their experiences with the use of the procedure in humans. In 1954, Smith and coworkers[5] reported further experimental work with this procedure in animals and related a limited clinical experience. It was not until 1957, however, when Lehman, Musser and Lykens[2] reintroduced direct left ventricular puncture in the study of cardiac disorders, that there was any wide clinical experience with its use.

During the past four years, we have incorporated direct ventricular puncture with selective left ventriculography into our cardiac catheterization program to permit more adequate study of various cardiac and vascular abnormalities.

The technique of left ventriculography is that described by Lehman and coworkers.[2] The patient is placed in the supine or in the right posterior oblique position on top of a rapid cassette changer. Lead markers are placed over the area of the heart and an additional lead marker at the xiphoid process. A scout film is obtained in order to determine both radiographic technique and the approximate position of the left ventricle. A 17-gauge, 18 cm. long, thin-walled Lehman needle with a single side hole is introduced via the subxiphoid approach directly into the heart. Local anesthesia is employed in adults, general anesthesia in children. Continuous oscilloscopic monitoring is employed to determine the position of the needle. A simultaneous brachial artery, central aortic or wedge pressure may be recorded. The passage of the needle is through the apex of the right ventricle, into the septum and then into the left ventricle. The monitor shows a right ventricular curve which becomes damped as the needle passes through the septum and then the typical left ventricular tracing when the needle enters the cavity of the left ventricle. Hypaque,® 90 per cent in a dosage of 1.0-1.2 mm. per kilogram of body weight, is injected by means of a pressure injector, at the rate of 25-30 cc. per second. Films are taken with a rapid cassette changer at a speed of 2 to 6 per second, or a cineangiogram may be made of the injected dye.

The subxiphoid approach, in our hands, has been far more satisfactory than direct apical needle puncture of the left ventricle. Our advocacy of this approach stems from the incidence of pneumothorax and injury to the left coronary artery reported by Brock[1] in the use of direct apical puncture. With the subxiphoid approach, the coronary vessels are far removed as the needle traverses the apex of the right ventricle. Similarly, the pleural cavity is rarely entered.

As an adjunct to cardiac catheterization, direct left ventricular puncture has proved of most value in the following:

A. Quantitation of mitral insufficiency.
B. Visualization of the left ventricular outflow tract.
C. Demonstration of ventricular aneurysms.
D. Visualization of the thoracic aorta and the brachiocephalic vessels.
E. Measurement of aortic and mitral gradients.

* * *

A. The diagnosis of significant mitral insufficiency remains at times a formidable task. Pressure curves from either the wedge position or directly from the left atrium can be misleading. The introduction of contrast material into the left ventricle and quantitating the amount of dye regurgitated into the left atrium, in a range of 1 plus to 4 plus, has proved most reliable when correlated with the operative findings: 1 plus and 2 plus regurgitation

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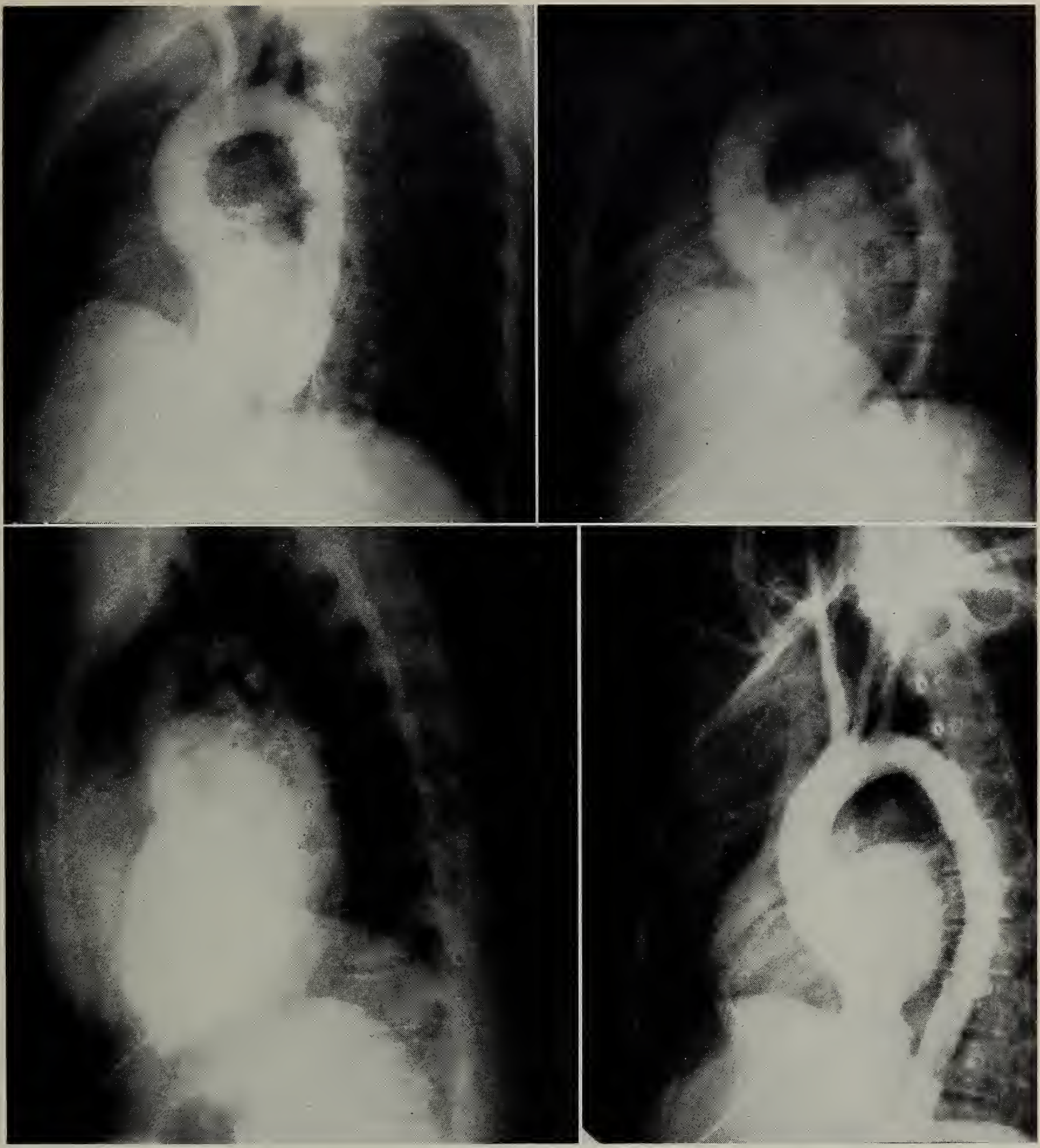

Figure 1.—X-ray films showing four degrees of severity of mitral insufficiency as judged by the amount of regurgitated dye following left ventricular injection. Reading from top left clockwise: 1, 2, 3 and 4 plus insufficiency.

are hemodynamically of little significance, whereas 3 plus and 4 plus regurgitation are considered to be surgically significant. (Figure 1)

This investigative measure is valuable in mitral stenosis associated with a loud systolic apical murmur. The functional systolic murmur of tricuspid regurgitation can often mimic mitral regurgitation. In these circumstances, left ventriculography provides a definitive answer.[6]

B. Recognizing and separating congenital aortic stenosis into valvular, subvalvular, supervalvular and muscular hypertrophy has become of increasing importance. It is now considered a routine procedure to visualize the left ventricular outflow tract before a definitive diagnosis of surgically correctable congenital stenosis is made. (Figure 2)

With direct left ventricular puncture, pressures can be recorded simultaneously with the brachial artery or central aorta. This permits assessment of the gradient across the valve as well as providing

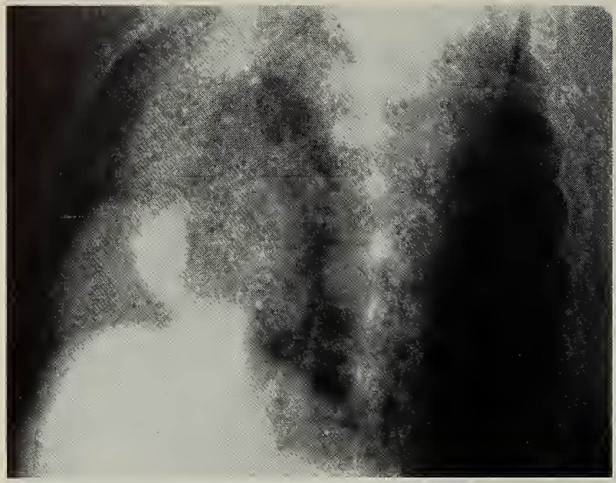

Figure 2.—Constriction of the left ventricular outflow tract below the aortic valve. (Proved at operation to be subvalvular diaphragm.)

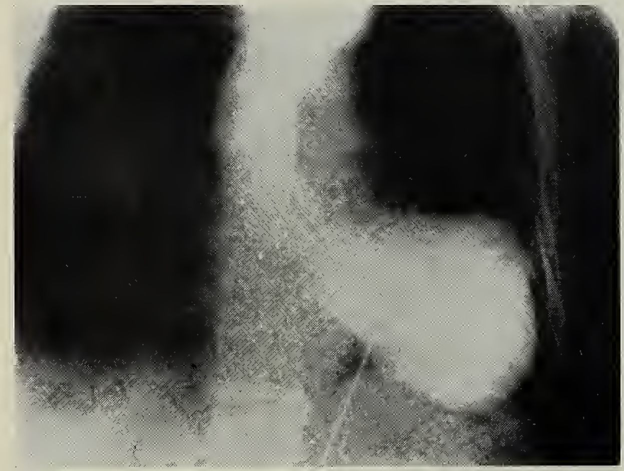

Figure 3.—Dilated fibrotic left ventricle with only small ventricular aneurysm demonstrated.

the means for the introduction of contrast material for visualization of the outflow tract.

In recent years, retrograde left heart catheterization has been extensively employed to measure the aortic valve gradient. One may note that traversing a partially stenotic valve with a retrograde catheter may further compromise the cross-sectional area and thus provide an abnormally high gradient. It is our feeling that direct ventricular puncture is simple and provides more exact information.

C. Lehman and coworkers have shown the value of left ventriculography in the diagnosis of ventricular aneurysms. We have also found it to be of use in the differentiation of a dilated left ventricle without an aneurysm from those which have true ventricular aneurysm. Figure 3 shows a large dilated left ventricle which retained dye during the 6 seconds of filming but revealed only a minute aneurysm along the left border.

D. As experience was gained with left ventricular puncture, it was noted that the late films in the series showed excellent opacification of the thoracic aorta and brachiocephalic vessel. Accordingly, it seemed logical to extend this procedure as a simple method of performing aortography. Isolated arteriosclerotic lesions of the aorta or brachiocephalic vessels lent themselves to prompt visualization. More complex congenital cardiac lesions, such as aortic stenosis associated with patent ductus of coarctation, can be easily studied by this method since both gradients across the aortic valve and visualization of the thoracic aorta may be obtained simultaneously.

Aneurysms of the thoracic aorta and their differential diagnosis from mediastinal tumors have lent themselves to this method of study. (Figure 4)

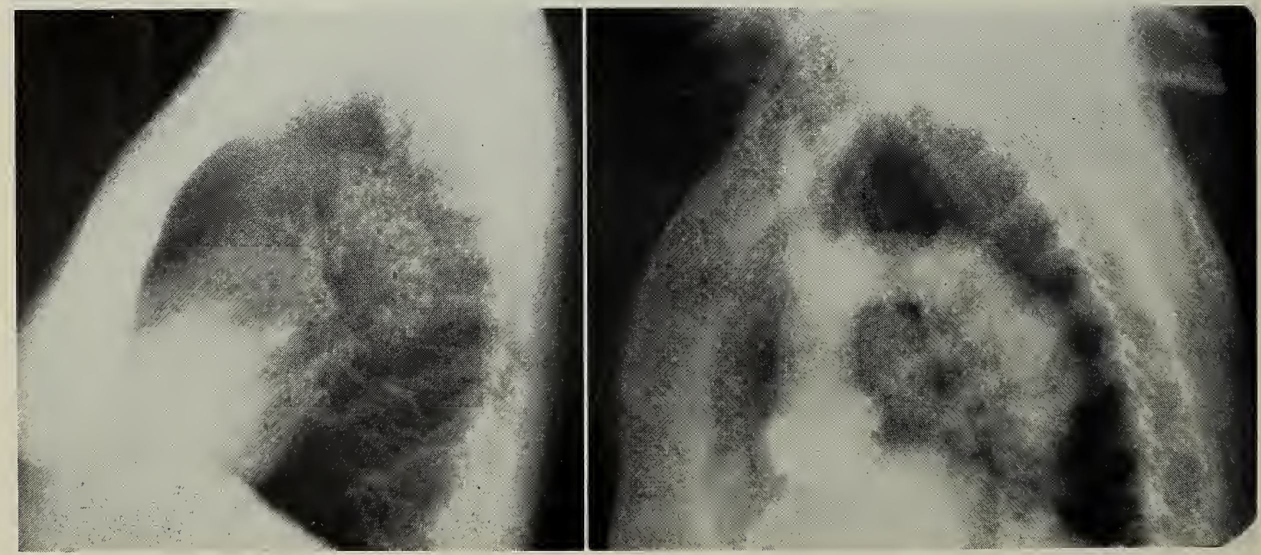

Figure 4.—Arteriosclerotic aneurysm of the thoracic aorta.

E. In the past decade, cardiac catheterization and related diagnostic procedures have served to emphasize the limitation of attempting to assess the physiologic changes of acquired heart disease by clinical methodology alone.

Before surgical intervention, we always obtain a gradient across the aortic and mitral valve. (Figures 5 and 6). This is done by placing a catheter in the central aorta or a brachial artery needle and a catheter in the wedge position. A needle is then introduced into the left ventricle and simultaneous gradients may be obtained across the mitral and aortic valve.

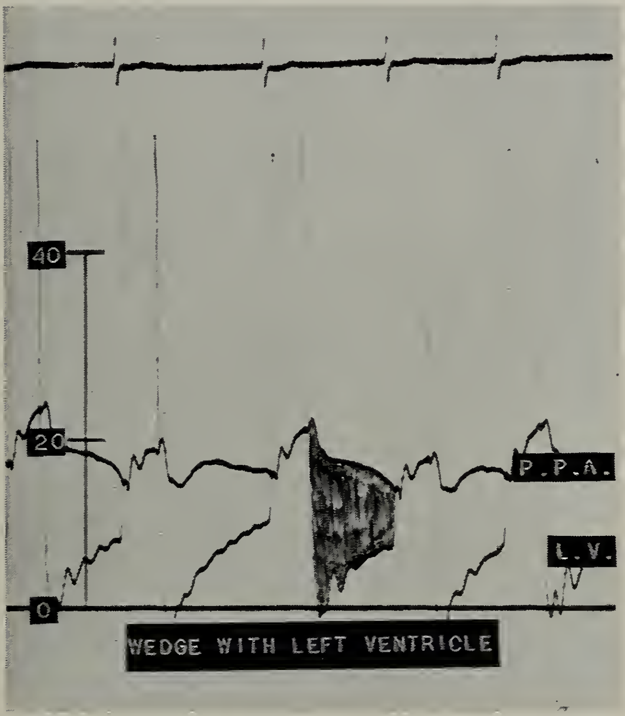

Figure 5.—Initial gradient obtained by direct left ventricular (LV) puncture and simultaneous pulmonary wedge pressure (in mm. of mercury). Shaded area is gradient across the valve.

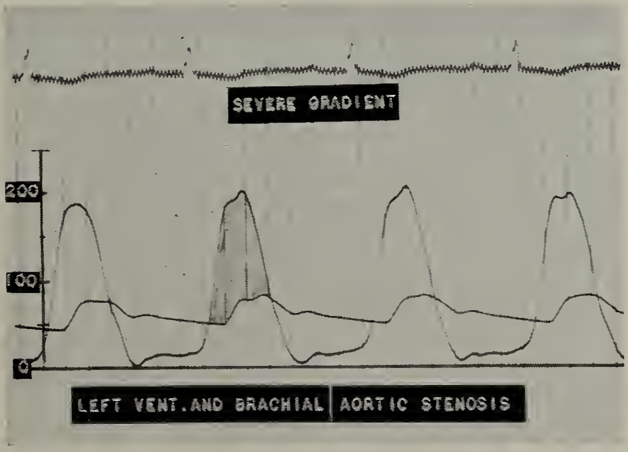

Figure 6.—Aortic valve gradient, simultaneous left ventricular and brachial artery curves (in mm. of mercury). The line reaching the higher pressure represents the left ventricle. The shaded area is the gradient across the valve.

Contraindications to direct left ventricular puncture are relatively few.

I. Recent myocardial infarct is an absolute contraindication but old coronary artery disease with myocardial infarction does not preclude study.

II. The presence of any hemorrhagic diatheses should be thoroughly investigated and corrected before an attempt at left ventricular puncture is made.

III. In small infants, we have been reluctant to introduce a needle directly, because of the small size of the ventricular chamber. We have, however, studied several children of age three without difficulty.

To date, we have performed 150 left ventricular punctures. Complications were few. Pneumothorax occurred twice. In both instances we had difficulty in placing the needle directly into the left ventricle. Repeated attempts were made with resultant entrance into the pleural space. Intrapericardial injection occurred in only one patient. Neither intrapericardial nor intramyocardial injection should occur with this procedure if certain tenets are closely adhered to during the course of the study.

It is of fundamental importance to obtain a clear, undamped curve, indicating that the needle lies free in the ventricular chamber. Next the patient must be carefully instucted to avoid taking a deep breath or moving or coughing at the time the contrast material is injected. It should be appreciated that the slightest excursion of the chest may withdraw the needle and cause intrapericardial or intramyocardial injection.

In two cases studies were incomplete. In one we were unable to puncture the left ventricle, for reasons that are obscure, and in the other we were unable to obtain an undampened pressure curve.

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The Use of Fibrinolytic Agents

Present Status in the Treatment of Cardiovascular Disease

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• Fibrinolysins are involved in the dissolution of clots. They are still in the experimental stage and are not yet ready for use by practicing physicians. The materials available for clinical use have undesirable serious side effects. However, the future for fibrinolysins in clinical practice has promise.

Clotting is a complex mechanism resulting in a great variety of changes. There are means which can either retard or prevent clotting and others which can dissolve a thrombus once it is formed. Knowledge of thrombus lysis is still fragmentary, but it has been sufficiently intriguing to have set into motion a series of studies on the mechanisms involved. These studies have been based on analyses of experiments conducted both *in vitro* and *in vivo.*

Unfortunately the attitude that what applies in such experiments can be transferred in its entirety to man has led to the premature clinical availability of fibrinolytic agents. This has resulted in a rash of clinical reports appearing like an epidemic. It should be stated categorically that fibrinolytic agents have no established place today in clinical practice; they are to be considered investigative drugs only.

Unexpected benefits may come out of activities with new drugs and this is true in the case of the fibrinolytic studies. Sherry, who (with Astrup, the Ambruses, Cliffton, and Johnson, among many others) has led recently in this field of study, found a chemical, epsilon-amino caproic acid, among the agents which inhibit activation of plasmin (the name given to the fibrinolytic agent in the blood). This inhibitor has been found to be useful in lessening the oozing of blood which occurs after prostatectomy and in uterine bleeding. This example of serendipity is at the moment of far more practical value than that derived from any clinically available fibrinolytic agent. Disorders of the fibrinolytic mechanism will become more clearly defined as our knowledge advances. Some of these disorders will be found to lead to bleeding tendencies, others to the accelerated deposition of fibrin thrombi. There has been some discussion recently concerning the possible role of such fibrin thrombi in the production of atherosclerosis. While this mechanism may be of importance in the progression of atherosclerosis and in the development of some of its sequelae, it is not primarily involved in the formation of the basic atheroma.

The fibrinolytic system must be kept in mind in any consideration of thromboembolism. The various components of the fibrinolytic system exist in the blood stream and in the tissues in amounts sufficient to influence the formation and dissolution of thrombi. Furthermore, it is clearly established that the amounts of these components and their interaction can be readily modified. Thus, it is considered that there is a constant tendency for thrombosis to occur because of minor trauma and stasis to which the entire vascular bed is subjected. If this is so, then fibrinolysis of these thrombi must be constantly going on to account for the infrequency of such thrombi. That such lysis may be constantly occurring is evidenced by the fact that large pulmonary emboli which do not cause the patient's death dissolve completely in many instances. Furthermore, in dogs, sizable, well formed clots placed in the portal vein have been found to dissolve. Such dissolution of thrombi may be of importance in the recanalization of occlusive thrombi and in wound healing. Normal blood contains a pro-enzyme *plasminogen* (perhaps derived from the eosinophiles) which when activated becomes the enzyme *plasmin.* This enzyme is capable of hydrolyzing the internal peptide bonds of the protein fibrin as well as those of some other proteins. Plasmin is contained in euglobin (Fraction III of Cohn). Even the purest plasmin is said to contain about 30 per cent impurities. It appears to act on the peptide bonds of arginyl and lysyl residues. Sherry estimated that the molecular weight of plasminogen is 143,000 and of plasmin 108,000. Both plasmin and plasminogen have an affinity for fibrin and fibrinogen. This is an advantage for their specialized fibrinolytic activity.

The conversion of plasminogen to plasmin requires an activator. This conversion can occur, *in vitro,* either spontaneously or with certain agents such as chloroform, by precipitation of the globulin fraction of the blood. It can also be activated by tissue kinases, by urokinase obtained from the

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urine and by trypsin. Kinases are present also in milk and tears. The conversion of plasminogen to plasmin can be activated by plasmin itself as an autocatalytic reaction. Bacterial kinases, notably streptokinase and staphylokinase, are effective. Tissue kinases are tightly bound to structural proteins but at least part of them can be readily extracted. Lung and brain appear to have the highest concentration. In the aorta, the tissue kinase is highly concentrated in the adventia with a much smaller amount in the media and intima. In the veins the intima has a greater concentration than in the arteries.

There has been little progress in purifying tissue kinase but considerable work has been done on the preparation of urokinase in stable form. Streptokinase is an extracellular bacterial protein produced by actively growing hemolytic streptococci of the Lancefield group A, human C and G. These streptokinases are impure but fairly specific for human plasminogen and may activate a preactivator present in human plasma.

EVIDENCE has accumulated that both plasminogen and plasmin have inhibitors. Much more is known about the latter than the former. Epsilon-amino caproic acid is such an inhibitor. Ratnoff concluded that human serum contains at least three different inhibitors. Inhibitors are also present in tissues. It would appear that fibrin has a greater affinity for plasmin than do the plasmin inhibitors, and the Ambruses have suggested that slow infusion of plasmin into the blood stream may permit its combination with one of the plasmin inhibitors, allowing plasmin to be released readily for combination with fibrin whenever fibrin is encountered. Such antiplasmin-plasmin combinations, however, appear to prevent the proteolytic action of plasmin upon other proteins which may be encountered when plasmin is injected more rapidly. Recently the Ambruses showed that human fibrin clots introduced into the circulating blood of dogs after an infusion of human plasmin will exhibit *in vitro* lysis on later incubation even though no "free" plasmin could be demonstrated in the dogs' blood at the time that the clot was removed. Furthermore, they showed that plasmin-antiplasmin complexes formed *in vitro* were as effective as the same amount of plasmin alone in dissolving the fibrin clot *in vivo.*

The avidity of fibrin for plasmin is evidenced by the fact that it is difficult to prepare fibrin entirely free of plasminogen. Furthermore, the plasminogen content of exudates and transudates have been found to run parallel to their fibrin content. Plasmin when adsorbed to fibrin is seemingly protected from circulating antiplasmins.

NUMEROUS METHODS have been devised to assay plasminogen, plasmin, kinases and antiplasmin in biological fluids and therapeutic agents. Early methods employed clots formed by adding thrombin or calcium to dilute citrated plasma. These methods are only roughly quantitative and do not distinguish plasminogen-kinase-plasmin effects from those of plasmin-antiplasmin. An improvement is the use of euglobin fraction, which gets rid of the interference by antiplasmin. In these euglobin fractions, the effect is judged on exogenous or endogenous fibrin clots, casein substrates or fibrin plates. It is an easy way of assaying plasmin or plasminogen but care must be taken to avoid contamination of plasminogen attached to the thrombin or exogenous fibrinogen. Besides casein, synthetic esters of arginine and lysine have been used to measure plasmin activity.

When using fibrin plates, one can distinguish between plasmin and plasminogen simply by comparing heated and unheated plates. Since heat destroys plasminogen, one can use this method to measure plasmin and kinase.

Another method of assay is to produce a clot in a vein by means of I^{131}-labeled, plasminogen-free fibrinogen, the rate of lysis being measured by the reduction of radioactivity in the labeled clot. Isotopically tagged clot particles have also been used as emboli for this purpose. *In vivo* methods permit a measurement not only of lysis but also of side effects such as pyrogenic reactions. In these *in vivo* methods, escape of the clots from the site being measured to the general circulation will give a false result. The *in vivo* method is useful in measuring the persistence of lytic activity locally in the clot after that contained in the plasma has disappeared because of the fixation of the lytic material by the fibrin of the clot.

The value of these *in vivo* clots or *in vitro* methods is limited by the difference of the materials or clots that are used from the thrombi encountered clinically. The latter quickly lose their ability to be lysed by the plasmin system so that the material must be introduced within three to six hours or, at the latest, within 24 hours.

Besides this, the administered lytic agent must get to the thrombus. There is disagreement as to the most effective way of doing this. One view is that held by Sherry, that the best way is to use a kinase. The kinase activates the plasminogen associated with the fibrin in the thrombus. Because of the affinity of fibrin for plasmin, this prevents neutralization by the ever present plasma antiplasmins. Unfortunately, the kinases available today, the streptokinases, are pyrogenic and antigenic and hence not clinically suitable. Sufficient work is being done on urokinase to suggest that a kinase with fewer side effects will be found for clinical use.

These are very practical objections. In the case of recent myocardial infarction, for example, the presence of pyrogenic effects with fever would make the early use of the kinases now available sufficiently hazardous because of the increased work of the heart so induced. And this would nullify any possible benefit to be derived from dissolving coronary thrombi. If one waited until the heart was in a better state, there would be less fibrinolysis even with the best kinase used and, the need for such a procedure would have become less urgent since compensatory mechanisms already present would have come into play to permit the heart to survive.

ANOTHER METHOD of inducing fibrinolysis is to use plasmin itself. If plasmin is given in high concentrations hypofibrinogemia or afibrinogemia may result. If plasmin is given relatively slowly it will have little effect on plasma proteins other than fibrin because of the greater affinity of fibrin for plasmin. In slow infusion, the plasmin is locally and rapidly combined with one of the antiplasmins in the blood. This prevents the plasmin so held from acting on other proteins but permits fibrin to pick it up readily from the loose plasmin-antiplasmin combination. This attractive concept, advanced especially by the Ambruses, is considered by many investigators to be unproved. However, the fact that plasmin does not have the side effects of presently available kinases warrants further studies.

With this background we are prepared to consider the present fibrinolysis in clinical therapeutics.

Most clinical studies have not been adequately controlled. The methods employed to judge clinical results, namely, electrocardiographic evolution, coronary artery angiography and assay of clinical status, are too inaccurate for adequate measurement of effective fibrinolysis clinically.

Not all occlusions are thrombotic. In the case of the coronary vessels, occlusion may be caused by atheromatous material. Not all thrombi have a uniform distribution of fibrin. It has been shown that in naturally occurring thrombi the head of the thrombus is formed by platelets and leukocytes with little associated fibrin. There are white and red thrombi clinically. Arterial thrombi differ from venous thrombi. As they grow older, thrombi become progressively more resistant to thrombolytic agents. After three days no fibrinolytic effect is demonstrable. Actually, unless therapy is instituted in a matter of hours little fibrinolysis can be expected.

The two products on the market, Actase® and Thrombolysin®, are both antigenic. They are mixtures of streptokinase, plasmin and other material. The kinases they contain may cause fever, shock and hypoxia. They should not be used clinically on a routine basis.

Fibrinolysins are still in the experimental stage and should not be used in clinical practice—whether for coronary thrombosis, arterial thrombosis or venous thrombosis.

In short, at present, fibrinolysins have not been proven clinically useful. The future of fibrinolysins may be much brighter. The theory is appealing. There is need for better understanding of the mechanisms involved. More studies are needed on the action of plasmin and kinases on various types of clots and on naturally occurring thrombi, both as to kind and site and age. More uniformity is needed in assaying the lysis of clots and thrombi. Purification of plasmin for ready clinical use and of a pyrogen-free non-antigenic kinase are essential. Perhaps more attention should be paid in this connection to urokinase—and a human urokinase would be a big step forward. There is also the need of more sophisticated clinical studies with proper controls—and the discouragement of the continued publication of mere testimonials even when they include tens and hundreds of cases.

BY SUCH MEANS, it is possible that a clinically suitable preparation for the rapid lysis of venous and arterial thromboses may become available for widespread use. In the case of coronary thrombosis, I doubt that fibrinolysis will turn out to be of much use because of the usual delay, often up to several hours, after the thrombosis has occurred before the patients come under active treatment. Only (if and when) such therapy can be used over an extended period of time in impending myocardial infarction do I conceive of any possible role of this therapy in myocardial infarction.

Finally, may I suggest that fibrinolysins may prove to be of value in hyaline membrane disease of newborn infants. Here experimental evidence suggests that the basis of the disease appears to be fibrin deposition. This may be due to plasmin lack in the lung resulting from the extraordinary release of antiplasmin by the placenta. It would make sense, if the facts are as stated, to attempt the employment of fibrinolysins to dissolve the hyaline membrane and relieve the baby's disability. Initial studies, however, have so far been disappointing.

In addition, I would suggest that thrombi disintegrate within blood vessels by means other than fibrinolysis. An attempt needs to be made to explore these processes intensively. Who knows but that the practical solution to thrombolysis may reside in some of these still mysterious mechanisms rather than in fibrinolysis.

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Leukemia after Radioiodine Therapy For Hyperthyroidism

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• **In a group of 650 patients with hyperthyroidism treated with radioiodine between 1945 and 1961, two cases of leukemia occurred. In one patient the diagnosis of chronic lymphatic leukemia was made three years after the I^{131} therapy. Acute or subacute myelomonocytic leukemia developed in the other patient after an interval of 14 years. However, no conclusions can be drawn regarding a possible causal relationship between such therapy and the subsequent occurrence of leukemia. With passage of time, an ever increasing number of cases of leukemia can be expected in such patients on the basis of natural occurrence alone.**

SINCE THE INTRODUCTION of radioiodine in the treatment of hyperthyroidism, the possible induction of leukemia by radiation has given concern. That under certain conditions radiation can serve as an etiologic agent in the development of leukemia seems well established.[3] Assuming that a linear relationship between radiation dose and leukemia induction exists and that there is no dose threshold, Lewis[4] estimated the probability of radiation-induced leukemia as 2×10^{-6} per rad whole body per year. Brues[1] criticized the linear relationship-no threshold hypothesis, and, in addition, summarized the evidence to suggest that a dose threshold does exist. At present we know neither whether a threshold occurs nor what its level may be. Thus, it is not certain whether the radiation doses received in radioiodine therapy of hyperthyroidism are of a magnitude to induce leukemia. Solution of this problem is of both theoretical and clinical interest.

In 1960, Pochin[7] published a retrospective survey based on data from major users of radioiodine in the United Kingdom, Canada, Austria and the United States. He reported 18 cases of leukemia diagnosed after radioiodine therapy of hyperthyroidism. In addition, he mentioned three other cases of symptomless leukemia disclosed by blood examination before the therapeutic dose of radioiodine was given. Utilizing data for the incidence of natural leukemia, Pochin calculated that 21 cases of leukemia would have been expected by chance alone in this group of patients. The number of acute leukemia found was 13, whereas the number expected was 9.7. It was concluded that present evidence neither supports the idea that radioiodine treatment of thyrotoxicosis induces leukemia nor excludes the possibility.

Reviewing the United States material in Pochin's report, Werner and coworkers[10] found fewer cases of chronic leukemia than was expectable on the basis of chance (three actual against nine expectable). They also noted that in females both the total number of cases and the number of chronic cases were smaller than the expectable (two against ten, and one against six, respectively). In men the number of acute cases was more than expected (six against one).

In a 16-year period ended with 1961, 650 patients with hyperthyroidism were treated with I^{131} at the University of California Hospitals, San Francisco. Follow-up of this material has disclosed two cases of leukemia.

REPORTS OF CASES

CASE 1. The patient, a woman, had subtotal thyroidectomy in 1944 for a toxic nodular goiter. In March, 1954, when the patient was 65 years old, there was a recurrence of the toxic nodular goiter and she was referred to the University of California Radioiodine Laboratory. There on March 26, 1954, she was given a dose of 9.5 millicuries (mc.) of I^{131}. On May 28 and on August 6, 1954, 8.2 and 6.9 mc. of I^{131} were administered, respectively. By October 1, 1954, the patient was euthyroid and remained so thereafter without further thyroid therapy.

On September 13, 1957, the patient returned with symptoms of malaise, easy fatigability, weight loss, anorexia and hemoptysis. Cervical, axillary, and epitrochlear lymph nodes were enlarged. The liver and spleen were also enlarged. Leukocytes numbered 38,000 per cu. mm., 73 per cent lymphocytes.

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Bone marrow aspirate showed chronic lymphocytic leukemia. Review of the records from the outside hospital where the patient had been studied in March 1954 showed that she had had enlarged cervical lymph nodes and a palpably enlarged spleen at that time. The latter was evident on a roentgenogram of the abdomen taken in March 1954. A total leukocyte count had not been done but a differential count had shown 47 per cent lymphocytes. This information had been overlooked at the time.

The patient died of leukemia on October 1, 1958. Necropsy showed evidence of chronic lymphocytic leukemia involving liver, spleen, bone marrow, lymph nodes and kidneys.

CASE 2. A 48-year-old Greek man was referred to the University of California Hospitals in March 1946. He had thyrotoxicosis with exophthalmos and a diffusely enlarged thyroid gland. No enlargement of lymph nodes or of liver or spleen was present. Leukocytes numbered 10,500 per cu. mm.—70 per cent polymorphonuclear cells and 27 per cent lymphocytes. No abnormality was noted on microscopic examination of peripheral blood.

Between April 3 and July 9, 1946, the patient received 2.7 mc. of I^{131}. By September 9, 1946, he was euthyroid, and from that time on required no further therapy for thyroid disease.

In November 1959, when admitted for a urethral stricture, peripheral blood studies showed a packed red cell value of 33 per cent and leukocytes 11,000 per cu. mm.—65 per cent polymorphonuclear, 3 per cent eosinophils, 2 per cent basophils and 30 per cent lymphocytes with no immature forms present.

Because of the development of petechiae, he was readmitted on July 1, 1960. Ten days before this entry, extraction of four teeth had been followed by hemorrhage sufficient to necessitate transfusion of five units of whole blood. On admission the leukocyte count was 12,000 per cu. mm., and on microscopic examination of a specimen of peripheral blood many metamyelocytes and myeloblasts were noted. A few days later platelets numbered 11,000 and leukocytes 48,000 per cu. mm. A diagnosis of acute myelomonocytic leukemia was made. The patient died of leukemia in November 1960. Necropsy was not done. The history and slides of peripheral blood smears and aspirated bone marrow were reviewed by Moloney,[5] who agreed with the diagnosis of acute or subacute myelomonocytic leukemia.

DISCUSSION

Assuming that the total body radiation from radioiodine treatment of hyperthyroidism is 0.8 rad per mc. administered,[9] the two patients here reported upon received approximately 20 rads and 2 rads, respectively. The first patient was a woman with chronic lymphocytic leukemia and the second a man with acute or subacute myelomonocytic leukemia. The evidence suggesting that chronic lymphocytic leukemia was present before radioiodine therapy in Case 1 was overlooked and the diagnosis not made until three and a half years later. With respect to chronic lymphatic leukemia, Moloney[5] found no evidence that it has resulted from radiation exposure. It seems probable that in this instance the leukemia was unrelated to the I^{131} irradiation.

Whether the case of myelomonocytic leukemia was radiation-induced cannot be determined. The long latent period of 14 years and the relatively small dose of radiation (approximately 2 rads) would seem to lessen any implication of causal relationship.

Case 1 was one of the three mentioned by Pochin[7] as detected by routine examination before radioiodine therapy and was not included in the 18 cases he dealt with in his study. However, in comparing observed with expectable incidences of leukemia, this case probably should be considered as having occurred at the date of diagnosis. The second patient was not known to Pochin at the time he summarized his material and thus represents a new case. Since Werner and coworkers[10] considered only the United States material contained in Pochin's 18 cases, neither of the two cases reported herein was taken into account in their study.

Assuming that equal numbers of new patients are treated with I^{131} each year, Pochin[7] calculated that the total number of patient-years and, therefore, the expected incidence of coincidental leukemia, will increase with the square of time since the introduction of radioiodine therapy. Therefore, whether or not a causal relationship exists, an ever-increasing number of reports of leukemia occurring in I^{131} treated thyrotoxic patients can be expected.[2,6,7,8]

Although instances of leukemia diagnosed after radioiodine therapy should be reported, no conclusions regarding pathogenesis can be derived from reports of single cases or of series of cases. Such conclusions must await studies of a large number of patients observed for many years. This implies complete follow-up and detailed reporting both of radioiodine-treated patients and of a suitable control series, each numbering in the tens of thousands. Such a study is currently being undertaken under the auspices of the Radiation Study Section of the National Institutes of Health.

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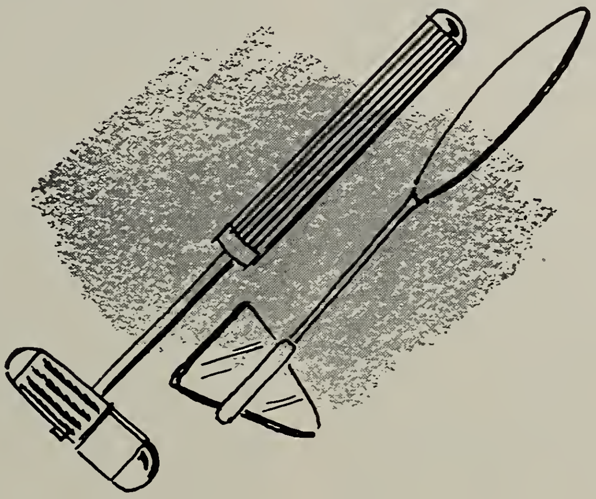

Femoral Neck Fractures in the Aged

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• Clinical data were reviewed on 99 patients with 102 fractures of the femoral neck on the Orthopedic Service of the San Diego County General Hospital. All were elderly. Twenty-one were dead within two month of the time the fracture was reduced and 36 within a year. In 14 cases the fracture was impacted or undisplaced; there was only one of these in which the fracture did not unite following treatment, and that was for iatrogenic reasons. Sixty-one per cent of the displaced fractures healed; only 32 per cent of the total number of patients with displaced femoral neck fractures walked again.

INTRACAPSULAR FRACTURE of the femoral neck even in vigorous adults is a serious problem to the orthopedic surgeon. In aged persons the problem is further complicated and there is no ready uniform solution. For light on the management of such cases and the results of treatment, the clinical records of 99 patients with fractures of the femoral neck, taken at random from the files of the San Diego County General Hospital, were reviewed. All the patients were indigent and aged. Seventy-eight were women, who had 80 fractures of the femoral neck, and 21 were men with 22 fractures, about evenly divided between the right and left side. The average age of the women was 79 years and of the men 78. The oldest patient was 97 at the time of fracture, and the youngest was 50. In the course of the study a few patients were brought back to the hospital for follow-up examination. The remainder were not seen by the author, the information being only that which could be obtained from x-ray films, from clinical records on file, from relatives, from nursing homes, and, occasionally, by telephone communication with the patients themselves. The longest follow-up was 20 years, the patient being a woman 80 years of age at the time of fracture, whose hip was fixed with bicycle spokes and who was seen again at the age of 100 with an intertrochanteric fracture of the opposite hip. The shortest follow-up was several hours in a patient who died shortly after admission. The average follow-up of patients surviving long enough for an end result to be achieved—that is, one year—was 30 months.

Morbidity and Cause of Death

Forty-six of the 95 patients available for analysis (4 patients having been lost to follow-up) were dead at the time the review was undertaken. Six of them died within two weeks of hospital admission, three of them without operation, as they were moribund on admission. The average age of these patients was 80 years, excluding one 68-year-old patient who died of a perforated ulcer. Twenty-one patients died between the first and the sixth month after admission, the average survival time being two months. For them, again, the average age was 80. Seven patients survived from six months to one year, and for them too the average age at the time of death was 80. Ten patients survived from one to five years and two patients more than five years. One of them lived for 25 years with non-union of a femoral neck fracture for which surgical fixation had never been done. She died of carcinoma of the face. The average age of all patients who died was 80 and the average time following fracture was 15 months. Sixty per cent of the patients who died did so within two months after the fracture occurred. As would be expected in any group of this age, the causes of death were varied. The major causes of death were: (1) Heart disease (failure and coronary artery disease); (2) pneumonia; (3) cancer; (4) stroke; (5) leukemia; (6) diabetes; (7) cholecystitis; (8) shock; (9) infection; (10) cerebral arteriosclerosis; (11) ruptured ulcer; (12) generalized senility.

Patients Available for Analysis

Subtracting the four patients lost to follow-up, and the 34 who died before an end result could be obtained, there were 64 patients with fractures of the femoral neck available for analysis at an average time of 30 months following the fracture. However, 13 of the fractures were impacted or undisplaced, all of which went on to union with the exception of one in which failure to heal was iatrogenic. There were, then, 51 displaced intracapsular fractures for study.

Undisplaced Fractures

Undisplaced fractures amounted to 14 per cent of the present series, against 20 per cent in the series reported by Cleveland. Treatment of these fractures in this hospital is by internal fixation, and it is my belief that fixation with some form of threaded pin is the method of choice because nails may disimpact the fracture, with an occasional disastrous result, as happened in one of the cases in this series. Two

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Submitted April 20, 1963.

of the patients with undisplaced fracture died; one of them, who was moribund at the time of entering the hospital, died six days after admittance, and the other died four years after admittance, without having had fixation. The latter patient had had a severe typhoid infection, for which she was put in the hospital, and the fracture healed without operation. In the previously mentioned iatrogenic non-union, placement of a Pugh nail displaced a previously impacted fracture, and eventual failure of fixation necessitated a prosthetic replacement. All the other fractures united without difficulty.

Displaced Femoral Neck Fractures

In 51 cases of displaced femoral neck fractures available for study, were 20 failures—13 for non-union and 7 from aseptic necrosis. These fractures were all treated by manipulation and closed reduction using a fracture table (Bell), and an internal fixation device. The joint was not opened to obtain reduction and fixation in most instances consisted of multiple threaded pins (Hagie or Knowles). However, every type of fixation device was utilized at one time or another in the series. It was necessary to open the hip fracture in only one instance to achieve satisfactory reduction, and this case was unsuccessful in that fixation failed and a prosthesis was utilized to salvage the hip. All operations were carried out by the Resident Staff in training at thc San Diego County General Hospital. The average surgical time (from incision to closure) was 90 minutes. In the author's opinion if adequate reduction cannot be accomplished by closed methods, prosthetic replacement should be carried out, at least in patients as old as those in the present series. If the patients who died within a year after fracture—that is, before the result could be validly appraised—were considered to have had a bad result, the proportion of failures would be 64 per cent. If ambulation is considered necessary for a successful result, then success was achieved in only 32 per cent of cases.

In many instances aged patients with femoral neck fracture are so senile, debilitated and ridden with degenerative disease that no treatment could offer hope of salvage. A fractured hip in such patients is simply a symptom of their general deterioration. Treatment in such cases should aim at making the patient as comfortable as possible and the nursing care as easy as possible. To this end prosthetic replacement may be of more value than attempted nailing. On review of the clinical charts and x-ray films many of the patients in this series were noted to have had intertrochanteric fractures as well as those of the femoral neck.

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Asthma, Chronic Bronchitis and Emphysema

The Use of Intermittent Positive Pressure Breathing with Inspiratory Flow Rate Control

A Review of the Literature

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• In chronic obstructive lung disease (asthma, chronic bronchitis, obstructive emphysema) there is a segmental reduction in the caliber of the airways, which always results in obstruction to air-flow. Increased airway resistance is a physiological expression of airway obstruction.

The addition of inspiratory flow rate control to an intermittent positive pressure breathing device permits slow filling of a lung with obstructed airways, and is presented as a simple means of reducing the high pulmonary flow resistance and increasing the tidal volume.

BRONCHIAL ASTHMA, chronic bronchitis and obstructive emphysema are disorders characterized by a segmental reduction in the caliber of the airways, which may be due to mucus, edema, inflammation, bronchiolar collapse, spasm or a combination of these phenomena.* While etiologically different, those disorders share a final common path of morphological expression—obstruction to airflow. This results in an increased airway resistance with subsequent impairment of pulmonary function. The most effective therapy, therefore, will include measures to relieve the airway obstruction and means to reduce the high flow resistance.

It is the purpose of this paper to briefly review the possible relationships between asthma, bronchitis and emphysema as chronic obstructive lung disorders, to consider how generalized airway obstruction always results in increased airway resistance, to outline the clinical effects of such an increase in resistance and to examine how the addition of an inspiratory flow rate control to a pressure breathing device may be of therapeutic value in directly lowering the high flow resistance.

The Importance of Generalized Airway Obstruction

A relationship may exist between asthma, bronchitis and emphysema such as is outlined in Chart 1.[34] It must be stressed at the outset that in many cases of asthma, chronic bronchitis never develops. Persons with mild asthma do not have significant airway obstruction. Consequently chronic infection rarely develops in them, and their disease, which is generally of the extrinsic or seasonal variety, does not go on to emphysema. Similarly, most cases of chronic bronchitis occur in persons who are not asthmatic, and there are patients with full blown emphysema who have no history of asthma or chronic bronchitis or any respiratory infection.

However, the high incidence of bronchitis and later emphysema in persons with chronic asthma,[40,50] and the almost constant association of unspecified chronic bronchitis with emphysema[19,56] are such that these occurrences must be more than fortuitous. *Severe asthma* leads to decided airway obstruction with ventilatory impairment whether it is etiologically traceable to an allergen or not. Chronic plugging of the distal airways with thick mucoid secretions predisposes to the development and maintenance of repeated infections. The infective factor is the dominant cause of 40 per cent of asthma in England and Canada.[52]

Bronchial asthma and asthmatic bronchitis are true causes of emphysema but not the sole ones.[19,45,50] The incidence of emphysema in patients with long standing asthma is increasing[40,50] and asthmatic patients with cor pulmonale who die in status asthmaticus show evidence of permanent bronchiolar damage and destructive emphysema.[53] If asthma is uncomplicated by episodes of infective bronchiolitis, destructive emphysema is not likely to occur, even if death is due to status asthmaticus.[17,53] In such cases the lungs only show hyperinflation, as those of a person who has drowned.[17] Pathologists are not unanimous in the histological definition of destructive emphysema at the bronchiolar level, and what is called emphysema by some may well be simple hyperinflation to others. Severely asthmatic children, following a period of intensive therapy, showed no signs of emphysema.[47] But in a 40-year survey of causes of death in asthmatic per-

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*Reference Nos.: 3, 7, 22, 23, 26, 42, 45, 50, 54.

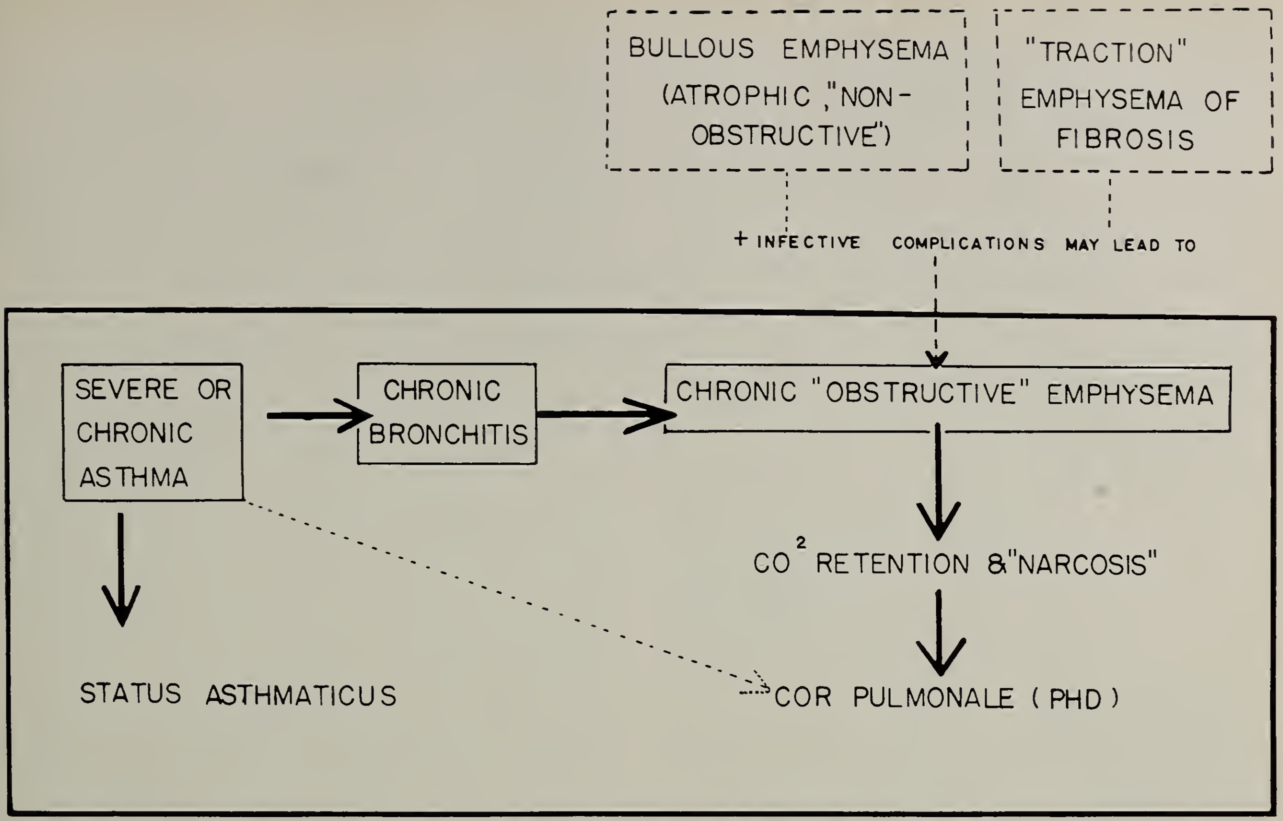
BULLOUS EMPHYSEMA (ATROPHIC ,"NON-OBSTRUCTIVE")
"TRACTION" EMPHYSEMA OF FIBROSIS
+ INFECTIVE COMPLICATIONS MAY LEAD TO
SEVERE OR CHRONIC ASTHMA
CHRONIC BRONCHITIS
CHRONIC "OBSTRUCTIVE" EMPHYSEMA
CO2 RETENTION &"NARCOSIS"
STATUS ASTHMATICUS
COR PULMONALE (PHD)

Chart 1.—The diseases of generalized airway obstruction. The chart shows the relationship that may exist between asthma, bronchitis and emphysema. (Adapted in part from Richards.[34])

sons conducted at the Mayo Clinic, all of the 35 patients who died in status asthmaticus and the 31 who died from the complications of asthma showed microscopic evidence of emphysema.[30]

Chronic bronchitis is the fourth ranking cause of death in Great Britain, where the mortality due to that disease is 45 times that recorded in this country.[13,16] Such a disparity may be due to particular conditions of climate and air pollution prevailing in England, but perhaps also to differences in diagnostic terminology.[13] Chronic bronchitis is not generally a consultant's diagnosis in the United States, where deaths due to that disease are more likely to be recorded as emphysema or pneumonia or, if right heart failure supervenes, as "arteriosclerotic or degenerative heart disease."

Emphysema is a complication and almost constant associate of chronic bronchitis, but it is found in other pulmonary conditions and therefore cannot be regarded solely as complication of chronic bronchitis.[45] However, patients with bronchitis who develop pulmonary heart disease and cor pulmonale uniformly show evidence of emphysema with widespread bronchiolar damage. Gaensler and Lindgen studied 555 cases of emphysema in Boston and found a definite history of chronic bronchitis in 68 per cent,[16] thus confirming that disorder as the commonest predisposing condition to emphysema.[44] It is also a widely held opinion that chronic bronchitis and emphysema are related by way of the common factor of inflammatory disease of the bronchioles.[24,27,32]

Chronic bronchitis is difficult to differentiate from asthma in middle aged men in whom paroxysmal dyspnea occurs for the first time.[45] Most cases of bronchitis do not develop in asthmatic subjects, but bronchospasm often occurs in moderately advanced chronic bronchitis, particularly on effort and during infective exacerbations. A prevalent definition of asthma in England is "reversible bronchial obstruction associated with chronic bronchitis."[13] Both chronic asthma and chronic bronchitis, with their partial airway obstruction, are associated with an increased susceptibility to recurrent bronchial infection, and hence possible bronchiolar damage with destructive emphysema.

Emphysema, lastly, is a term referring to both a syndrome and a group of disorders which may result in an irreversible distention of the air spaces with destruction of the lung parenchyma, where obstruction to airflow is usually a prominent morphological defect, and for which no unified pathogenesis has as yet been found. Emphysema is a disorder generally on the increase, with mortality rates having nearly doubled in this country between 1955 and 1958. In a recent discussion on the eti-

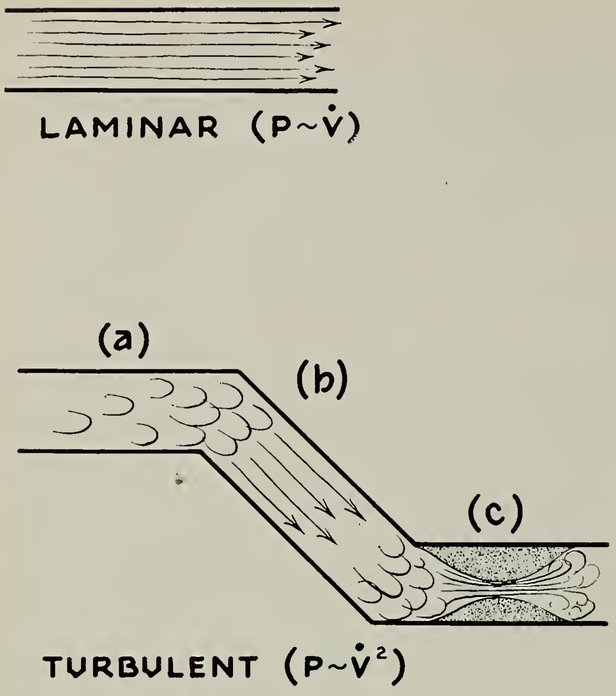

Chart 2.—The nature of airflow (adapted from Comroe[5]). Turbulence occurs when (a) flow is straight but at high velocity or (b) through a change in direction of the tube, or (c) through a narrowing of the tube.

ologic factors of emphysema, Richards made clear distinction between obstructive emphysema as a sequela of bronchitis, "traction" emphysema secondary to interstitial fibrosis as seen in coal miners' pneumonoconiosis, and "bullous emphysema," primarily nonobstructive and atrophic, viewed as a separate disease. In the last two forms, diffuse emphysema may, in time, develop, with true obstruction and secondary infection difficult to distinguish from those seen in bronchitis with emphysema.[34]

Most cases seen in clinical practice will be diffuse chronic obstructive emphysema with unspecified chronic bronchitis as a constant feature. It is this form of pulmonary emphysema which may progress more readily to pulmonary heart disease, as the obstruction worsens, the infective episodes recur and as the destruction of lung parenchyma and loss of vascular bed contribute slowly to a permanent state of hypoxia. In such cases cor pulmonale becomes well established, and right ventricular failure is the usual terminal event. The growing importance of pulmonary heart disease as a cause of congestive failure remains generally underestimated.[32] It is the obstructive form of emphysema also which benefits most from measures designed to relieve the obstruction and to reduce the high flow resistance.

Thus, irrespective of differences in their etiologic delineation, asthma, chronic bronchitis and emphysema maintain a certain relationship which centers on obstruction to airflow. Essentially, this relationship suggests that bronchiolar obstruction with infection may play a significant part in the development of diffuse chronic obstructive emphysema but not in the other forms of that disease. For these reasons, the vigorous treatment and effective prophylaxis of early and latent forms of generalized airway obstruction assumes a new importance.

Increased Airway Resistance

The main physiological aberration resulting from obstruction to airflow is increased airway resistance. This fact has been documented by extensive investigations.[10,11,15,25,28] In its simplest expression, airway resistance is a pressure flow relationship which measures the flow-resistive properties of the lung $(R\sim P/\dot{V})$, where the pressure, P, is the gradient required for flow and the flow, $\dot{V}$, is the volume per second.[5,8,14] Pressure depends on the dimensions of the airway and on the *work of breathing.* Flow depends also on the dimensions of the airways and on the *mechanics of airflow.*

The work of breathing generates the pressure gradient required for airflow and is the sum of elastic work to overcome elastic resistance in the lungs and thorax, plus resistive work to overcome airway resistance. The former is expressed as a pressure-volume relationship, or compliance; the latter as a pressure-flow relationship, or resistance.[5,8,14]

The mechanics of airflow determine largely the variations in the nature and rate of airflow observed from changing conditions in the airways. The laws of hydraulics which govern the friction of flowing fluids, and which were defined by Poiseuille for the flow of liquids through very small tubes,[33] may apply to air flowing through tubes.[5,36] These laws define *laminar* flow as streamlined and *turbulent* flow as that in which there are disturbed conditions in the flowing fluid. Chart 2, adapted from Comroe,[5] shows that turbulence occurs when air flows through a straight tube at high velocity or through irregular branching tubes or through narrow obstructed airways.

Rohrer pointed out that these same laws determine also the *rate* at which air flows through tubes.[36] He showed that the pressure required for laminar flow varies roughly as the velocity $(P\sim\dot{V})$ while the pressure for turbulent flow varies as the square of the velocity $(P\sim\dot{V}^2)$. Tracheobronchial flow, on the other hand, is a composite of both laminar and turbulent flow.[5,36] Depending upon the dimensions of the airway, flow will be more laminar or more turbulent, and when the smallest air passages become partially obstructed, turbulence develops.[12] Therefore, in generalized obstructive airway disease, the pressure-flow relationship within the lung is decidedly altered because of a reduction in the airway's cross-sectional area due to bronchiolar collapse, mucosal edema, spasm inflammation, or a combination of these factors. *This reduction in the dimensions of the airways modifies both the pressure required for flow and the nature of airflow.*[5,11] Thus, narrowing and obstruction of the airways promote a greater degree of turbulence[12] and the pressure required to sustain turbulent flow will vary as the square of the velocity. Consequently, with an increase in turbulence, both pressure and flow increase, and airway resistance—which is a pressure-flow relationship—also rises.[39]

In summary, an increase in airway resistance is observed in any case of generalized airway obstruction and is responsible for the pronounced increase in the "resistive" work of breathing so characteristic of patients with severe asthma and emphysema.[15] Airway resistance, then, is a useful index of the flow resistive properties of the lung and of airway obstruction in general. Airway resistance depends essentially on the dimensions of the airways—which determine the pressure required for flow, and on the nature and rate of airflow. But it also varies with different degrees of lung inflation[14] and with the rate at which the lungs are changing volume.[28] According to Mead and coworkers[28] this explains why, in patients with emphysema, rapid breathing does not permit diseased areas of the lung to empty well during expiration, thus causing a drop in compliance in addition to the increased airway resistance.[28]

Effects of Sustained Increased Airway Resistance on Pulmonary Function

Increased airway resistance is a constant physiological defect in asthma, chronic bronchitis and obstructive emphysema, and it is present throughout the entire course of those disorders. Since it measures accurately the flow resistive properties of the lung, it is a convenient quantitative index of airway obstruction, and its effects on pulmonary function are those of generalized obstructive airway disease.

The main function of the lung is gas exchange. For diffusion to take place across a normal alveolocapillary membrane, ventilation must lead to even distribution of inspired air on one side of that membrane, and pulmonary circulation must provide even capillary distribution on the other side. The three main components of pulmonary function are therefore *ventilation*, which is mostly mechanical, *diffusion*, which is physico-chemical, and *transport* of gases in the blood, which is circulatory. The first effect of increased airway resistance is a reduction in minute ventilation.[2] If more time is not available for adequate tidal respiration, the functional residual volume increases. This may alter the compliance of the lung[36] and will increase its flow resistive properties.[29] As a result the work of breathing increases to overcome the added pulmonary flow resistance, and dyspnea on exertion is the first manifestation of increased airway resistance.[35] In this first phase of pulmonary insufficiency, the major disability is reduction in the breathing reserve, which limits physical activity; but there is usually no significant hypoxia because the chest bellows can still compensate through hyperventilation.[6,51]

As increased airway resistance is maintained for prolonged periods, its effects become more severe, and alveolar hypoventilation occurs. Ineffective gas exchange of varying degrees of severity compounds the ventilatory insufficiency, carbon dioxide is retained, hypoxia develops, and, at the end of this sequence, respiratory acidosis.[4,41] This at first can be reversed with adequate therapy, but in the more advanced stages of the disease it may become a permanent chronic defect.[6,51] This, then, is the second phase of pulmonary insufficiency.

With the progression of emphysema into its advanced stages, the effects of increased airway resistance become still more pronounced and may lead to the development of pulmonary heart disease. The factors responsible for the development of that disorder are still not fully known. However, as hypoxia and further destruction of pulmonary parenchyma seem to go hand in hand in the later stages of emphysema, there is also a loss of vascular bed and a decided increase in resistance to pulmonary blood flow.[51] These are the factors which are believed to contribute to the development of pulmonary hypertension, the forerunner of pulmonary heart disease. Evidence of right ventricular hypertrophy is then common, as are constant disturbances in the ventilation-perfusion relationship.[34] In such circumstances, if for any reason alveolar hypoventilation with hypercapnia and hypoxia become aggravated, an exacerbation of pulmonary hypertension is likely to occur and may result in acute right heart failure, or early cor pulmonale. This is characterized by cardiac enlargement, elevated venous pressure, cyanosis, hepatomegaly and edema.[9]

With adequate treatment, the acute bronchopulmonary infection resolves, airway obstruction is relieved, hypoxia improves and heart failure subsides. The same picture of cardiopulmonary failure may recur with each serious exacerbation of the primary disorder, which triggers off episodes of alveolar hypoventilation. However, in the last stages of the disease, right heart failure and cor pulmonale may become chronic, and as each acute episode is more difficult to treat, death may then be due to both ventilatory and congestive heart failure.[1,6,35,51] As was pointed out earlier, the importance of pul-

I MECHANICAL:	INCREASED WORK OF BREATHING → NO HYPOXIA	DYPSNEA
II BIOCHEMICAL:	CO₂ RETENTION AND HYPOXIA → DUE TO ALVEOLAR HYPOVENTILATION	RESPIRATORY ACIDOSIS
III CIRCULATORY:	PULMONARY HYPERTENSION → DUE TO HYPOXIA + LOSS OF VASCULAR BED + INCREASED RESISTANCE TO PULMONARY BLOOD FLOW	PULMONARY HEART DISEASE (COR PULMONALE)

Chart 3.—Effects of prolonged increase in airway resistance on pulmonary function.

monary heart disease as a cause of heart failure is still grossly underestimated.[1,32,51] The effects of prolonged increases in airway resistance on pulmonary function are those that are observed in the natural course of chronic obstructive lung disease with pulmonary emphysema.[9] (See Chart 3.)

Direct Reduction in Airway Resistance in the Management of Asthma, Chronic Bronchitis and Emphysema

As has been noted, airway resistance is primarily a function of the rate of flow.[5,10,11,15,28] Obstructed or narrowed airways predispose to turbulent flow, and high rates of inspiratory flow tend to increase the turbulence. As the pressure required for turbulent flow is large, the airway resistance and the work to overcome it both increase in an attempt to maintain sufficient pressure for adequate flow. If the obstruction becomes more severe, and the flow still more turbulent, a point is reached at which further increase in pressure causes no further increase in flow, and volume flow falls.[7,11,15,28] In such cases, a decrease in the velocity of the inspired gas will best lower the airway resistance and permit flow to occur.

Reduction in high pulmonary flow resistance plays therefore a prominent part in the management of chronic obstructive lung disorders. In this connection, intermittent positive pressure breathing (IPPB) is an effective aid to bronchodilation and reduces the work of breathing.[37,38] However, respirators for IPPB used in the majority of hospitals today, while producing a type III curve,[31*] do not permit inspiratory flow rate control independently of pressure settings, and are therefore ineffective in *directly* reducing the high flow resistance encountered in severe obstructive lung disease. The reasons for failure of IPPB to improve alveolar ventilation in patients with severest emphysema in acute respiratory failure were studied by Jones, McNamara and Gaensler.[20] They showed that high inspiratory pressure is a frequent cause of poor result with IPPB, and that in severely ill patients with advanced airway obstruction and borderline heart failure, pressure breathing at times "may be physiologically and psychologically unbearable."[20] But these investigators did not study the effects of inspiratory flow rate control on obstructed breathing, since they used a conventional respirator with fixed high inspiratory flow rate, which did not permit individual flow rate adjustment.

Fixed high inspiratory flow rates delivered by most conventional machines are those of the unmetered line pressure and attempt to fill the lung rapidly. However, rapid delivery of inspired gases to an obstructed airway (as is the case with all respirators for IPPB without flow rate control) increases the eddying turbulence, hence increases the pressure to sustain flow and thus increases the airway resistance in that particular airway. This adds to the high flow resistance due to the obstructive disease itself, and causes the cycling pressure of the IPPB machine to be reached early in inspiration, leaving the patient literally short of breath, since passive lung insufflation stops before all of the distal airspaces become filled—that is, before the end of a complete inspiration. This explains why, in a severely obstructed airway, "peak machine flow is insufficient for inspiration."[20] By the same token, bronchodilators in the inspired gases tend to precipitate in the eddying turbulence generated in the upper airway, and cannot be carried distally where they are needed most. When this occurs, the patient desperately struggles for air. This further increases the work of breathing, which aggravates both the hypoxia and the alveolar hypoventilation and results in additional burden on the circulation. If the IPPB pressure is then suddenly increased, this will add to the gravity of the situation and may be injurious to a perhaps failing heart.[50] For these reasons, rapid mechanical lung filling in patients with severe obstructive airway disease and borderline heart failure, may have serious effects on both the ventilation and the circulation.

If, on the other hand, the IPPB machine used permits independent adjustment of the inspiratory flow rates to the particular degree of patency of an individual patient's airways, *slow* and more complete filling of that patient's lung becomes possible with each passive inspiration. In the presence of segmental airway obstruction, as occurs in chronic bronchitis, bronchial asthma and obstructive emphysema, what is needed is not that the IPPB respirator reach a peak flow, which may cycle the machine before inspiration is complete, but that the respirator be adjusted to maintain a slow but sustained flow to the distal airspaces. Slow flow rates will minimize eddying turbulence, diminish the pressure

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*Type III curve is the only mask pressure curve which will not engender circulatory ill effects (as was the case with earlier respirators which produced Type I and Type II curves).[31]

IPPB WITH HIGH FLOW-RATE	IPPB WITH LOW FLOW-RATE
1. ↑ IN EDDYING TURBULENCE (RAPID LUNG FILLING)	1. ↓ IN EDDYING TURBULENCE (SLOW LUNG FILLING)
2. ↑ IN PRESSURE TO MAINTAIN FLOW ($\dot{V} \rightarrow \dot{V}^2$)	2. ↓ IN PRESSURE NEEDED FOR FLOW ($\dot{V}^2 \rightarrow \dot{V}$)
3. ↑ IN AIRWAY RESISTANCE ($R = P/\dot{V}$)	3 ↓ IN AIRWAY RESISTANCE.
4. CYCLING PRESSURE REACHED EARLY IN INSPIRATION. LUNGS STOP FILLING BEFORE DISTAL OBSTRUCTED AIRWAYS BECOME VENTILATED.	4 CYCLING PRESSURE REACHED LATE. LUNGS KEEP ON FILLING SLOWLY UNTIL ALL AIRSPACES BECOME VENTILATED.
	∴ A. COMPLIANCE ↑ (LUNG "STIFFNESS" ↓) B. TIDAL VOLUME INCREASES. C. MORE EVEN LUNG FILLING. D. IMPROVED INTRAPULMONARY GAS MIXING.

Chart 4.—Effects of intermittent positive pressure breathing with high and low inspiratory flow rate on obstructed breathing.

required for flow, reduce the airway resistance and permit the cycling pressure to be reached late in a passive inspiration, because the intra-airway pressure rises *slowly* as the lungs gradually comply with increasing inspiratory volumes.[39] It must be stressed that since the pressure rises gradually, the machine cycling is delayed, giving time to the lung to fill slowly but more completely. This results in increased tidal volumes, permits more even lung filling, improves intrapulmonary gas mixing[49] and does not lead to sudden pressure increases, which may be harmful to an impaired circulation. The effects of IPPB with high and low inspiratory flow rates on patients with severe airway obstruction are summarized in Chart 4.

Sieker and Hickam were among the first to point out that a respirator which delivered gas at slow flow rates permitted greater tidal volume and a more even gas distribution throughout the lung of a patient with high airway resistance than was the case when the gas was delivered rapidly.[41] In view of the importance of slow filling of the lung in the reduction of high airway resistance,[15,28] a portable device for the production of intermittent positive pressure breathing—the Mark VII which could control the rate of flow of inspired gases independently of the pressure at which the respirator was set—was designed in 1957 by Bird. This was made possible through metering of the line pressure so that the inspired gases could be given sufficient time to pass through narrowed or collapsed bronchioles.[39] The main advantage of such a device is that inspiratory flow rates can be adjusted to suit the patient's individual needs. Adjustable flow rates of the inspired gases had been recommended in IPPB devices as early as 1948[31] but did not become generally available until a decade later.[39] It is of considerable therapeutic significance that slow filling of the lung in the presence of widespread airway obstruction directly reduces the eddying turbulence largely responsible for the high flow resistance, and hence reduces the resistance.[39] Such a diminution in airway resistance leads to increase in both compliance and tidal volume and to a reduction in the work of breathing.[37] This permits also more even lung filling[49] and results in improved capillary perfusion because of a relaxation in arteriolar spasm[18] and in more effective intrapulmonary gas mixing.[48,49]

In this regard, artificial ventilation experiments were conducted on fresh lungs taken in the postmortem state from patients with airway obstruction.

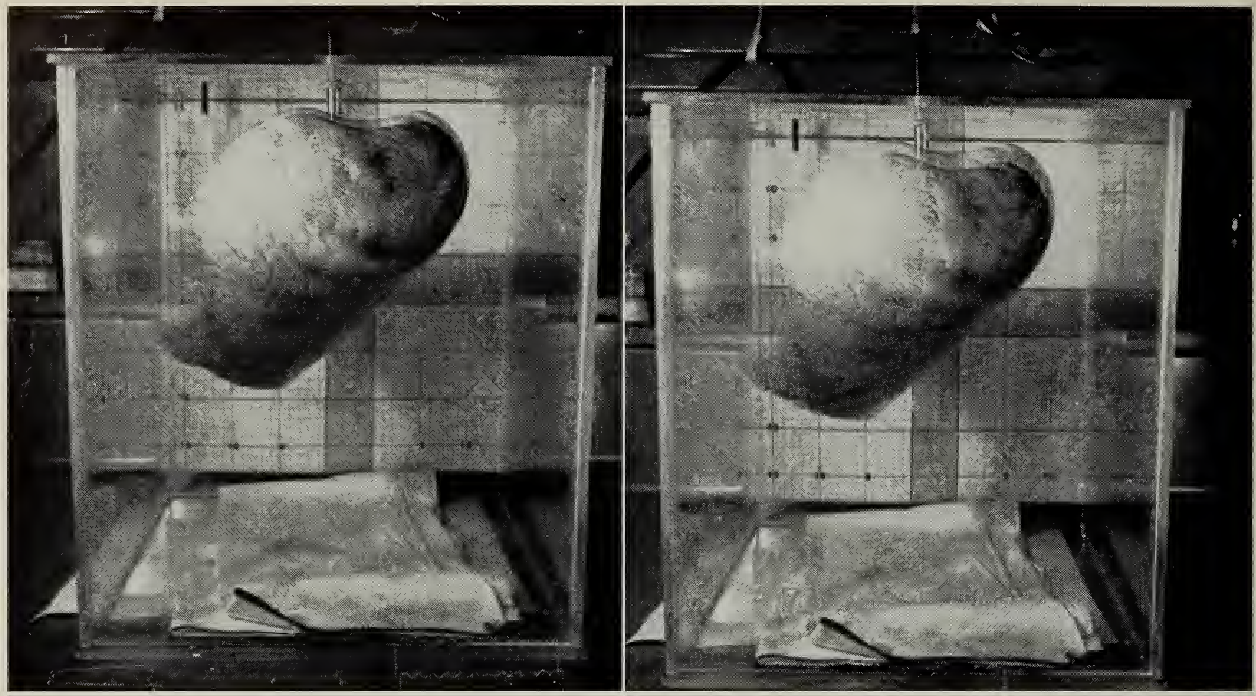

Figure 1.—Superimposed photographs, taken at 1/250 second, of inspiration and expiration in a slightly emphysematous lung "ventilated" by a Mark VII respirator (not shown in picture) set on automatic breathing rate. *At left,* with no inspiratory flow rate control, the respiratory excursions are less than those observed at right, where the rate of flow of inspired gases has been adjusted to the particular needs of the lung's airways, independently of the pressure limit at which the respirator is set (12 cm., water). The plastic cage shown simulates a human thorax. Continuous suction maintains a negative pressure of −6 cm. of water to avoid expiratory collapse. The amplitude of the respiratory excursions may be taken as a rough index of the tidal volume.

These lungs were set up in a plastic cage simulating the human thorax and connected to an IPPB respirator which could be set at different automatic breathing rates, different inspiratory pressures and different inspiratory flow rates. Figure 1 shows the amplitude of the respiratory excursions during the artificial ventilation of a lung with airway obstruction, and demonstrates simply that in the presence of airway obstruction slow inspiratory filling permits greater respiratory excursions than is obtained with fast filling.[39] The amplitude of these excursions may be taken as a rough index of the lung's tidal volume.

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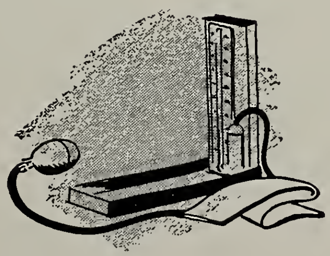

CASE REPORTS

Multiple Complications from External Cardiac Massage

Report of a Case

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CARDIAC MASSAGE by pressure on the outside of the chest is acclaimed as a simple and effective method of resuscitation[5] and is receiving widespread endorsement and application.[2,4,6,7] Infrequently, carrying out this procedure has caused rib fractures,[1,2,4] fracture of the sternal body,[2,4] hemothorax,[1,4] hemopericardium, lacerations of the liver,[1,2,4,6] rupture of the inferior vena cava near its junction with the right atrium,[4] laceration of the spleen,[2] hemorrhage at the pulmonary hilum,[2] bone marrow embolization,[1,4] rupture of the internal mammary vein,[2] and rupture of various abdominal or retroperitoneal blood vessels.[2]

The following experience illustrates the occurrence of the first six of these complications in a single patient, in whom laceration of the pulmonary parenchyma also was ascribed to the procedure.

REPORT OF A CASE

A 68-year-old white Italian-born married woman was admitted, comatose, to the emergency room of Sequoia Hospital at 1:45 p.m. on July 3, 1961. Three days before admission the patient had had severe precordial pain. Attributing it to "acute indigestion," she ingested baking soda and took a hot bath with some relief of symptoms. Medical care was not sought despite the entreaties of her husband. In the interim she had been free of significant pain until approximately an hour before hospital entry, when she collapsed while getting dressed.

Adequate past, social and family history could not be obtained, as the husband of the patient spoke very little English.

Upon physical examination the patient was observed to be cyanotic, comatose and breathing laboriously. The blood pressure was 132/78 mm. of mercury, the heart rate 112 and regular and respirations 30 per minute and labored. The heart sounds were only faintly audible and there were no murmurs.

Oxygen, levarterenol bitartrate (Levophed®) and morphine sulfate were administered but the patient's condition worsened. The heart sounds became inaudible and the respirations ceased. Neither palpable pulse nor discernible blood pressure could be obtained 30 minutes after admission. An electrocardiogram revealed asystole.

Vigorous external massage was begun by the attending physicians and was continued unsuccessfully for approximately 30 minutes. The antemortem diagnosis was myocardial infarction, acute, fatal, with cardiac arrest.

Significant autopsy findings were limited to the thorax and abdomen. Anterior fractures of the left 3rd through 7th ribs and right 2nd through 8th ribs were noted. There was a recent transverse fracture of the upper portion of the body of the sternum. The pericardial cavity contained 100 cc. of recently clotted blood, the source of which appeared to be a tear in the inferior vena cava at the pericardial reflection. The heart weighed 480 grams. Generalized atherosclerosis of the coronary arteries was observed and the marginal branch of the circumflex artery was completely occluded by a fresh thrombus. There was an area, 2.5 cm. in diameter, of fresh anterolateral myocardial infarction of the left ventricle. The cardiac valves were within normal limits. The right pleural cavity contained 100 cc. of blood and the left pleural cavity 250 cc. There was a 2.5 cm. tear of the visceral pleura extending 8 mm. into the parenchyma of the anterior surface of the lower lobe of the left lung.

The peritoneal cavity contained about 1000 cc. of fresh blood. The liver weighed 2050 grams and along the edge there were several capsular tears at the margin of the right lower lobe and in the inferior portion of the quadrate lobe. These small tears extended into the underlying parenchyma and were the source of the peritoneal hemorrhage. The gallbladder contained numerous small mixed stones and slight mucosal cholesterolosis was noted. There was no evidence of generalized bleeding.

DISCUSSION

The complications of external cardiac massage are caused either by excessive manipulative pressure or by improper anatomic application of resuscitative effort.[4] The use of massive pressure is the probable cause of the rupture of the inferior vena cava and

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vessels of lesser calibre. Pressure applied high on the sternum near the sternal angle can cause fracture of the body of the sternum, and pressure applied directly to the ribs may result in costal fractures. Force applied over the xiphoid process, epigastrium or lower thorax is the likely cause of hepatic or splenic injuries. The increased negative intrathoracic pressure which is created between compressions by the resultant expansion of the intact thorax is presumably the reason for bone marrow embolization from fracture sites to the pulmonary arteries.[4]

Prevention of complications from external cardiac massage can only be obtained by the application of appropriate pressure at the proper anatomical site—the inferior portion of the body of the sternum. As described by Kouwenhoven and Jude,[5] appropriate pressure is that amount necessary to move the sternum 3 or 4 cm. toward the vertebral column. It is emphasized that the force sufficient to do this is influenced by two separate factors: the anatomical construction of the patient's chest and the strength of the person employing the procedure.

Slight pressure with one or two fingers will suffice in a newborn infant[4] but in an adult, whose chest is less resilient, pressure with both hands in such a way that the pressure is transmitted through the heel of one, usually are required. The application of total body weight, recommended by some local heart association bulletins,[6] can be avoided in the majority of cases, this extreme being necessary only when the thorax is extremely rigid. Undoubtedly, optimal use of external cardiac massage would include the least application of force at the proper site and the smallest excursion necessary to provide palpable pulsations in the carotid, femoral or brachial arteries that are accompanied by a reduction of the pupillary dilatation that accompanies cardiac asystole.[6]

The previous editorial comment,[3] "A heavy hand on a frail chest is not without risk," might well be restated as, "A heavy hand improperly placed on a frail chest invites injury."

SUMMARY

In a case in which external cardiac massage was carried out, many complications reported in the literature occurred—multiple rib fractures, fracture of the sternum, hemothorax, hemopericardium, lacerations of the liver and rupture of the inferior vena cava near its junction with the right atrium. In addition a previously unmentioned complication, laceration of pulmonary parenchyma, was observed at autopsy.

The causes and prevention of complications from this procedure are discussed.

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Jejunogastric Intussusception Following Subtotal Gastric Resection

ALEX GERBER, M.D., and
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RETROGRADE JEJUNOGASTRIC INTUSSUSCEPTION is a rare complication of gastroenterostomy or subtotal gastric resection. Irons[5] reported the one hundredth case in the world literature in 1955, and a total of 26 cases reported in this country to 1959 were reviewed by Salem,[7] who added a case of his own. In excellent reviews of this subject by Mason[6] and Caudell[3] it was pointed out that none of the reporting observers had seen more than two patients with this disease, and that the literature is made up almost exclusively of single case reports. The serious nature of this form of high intestinal obstruction with its uniformly fatal ending if untreated, and the almost universal delay in diagnosing this little-known condition prompts this single case report.

The clinical features of jejunogastric intussusception are classical, and the diagnosis, if thought of, can be made quickly and confirmed easily. In the cases reviewed by Foster[4] he noted that the mortality was five times as high when operation was delayed beyond 48 hours from the onset of symptoms as it was when correction was carried out earlier. Unfortunately, the diagnosis has been established at autopsy in almost 30 per cent of the reported cases.

The earlier cases followed gastroenterostomy, but (understandably) in the more recent cases the precedent operation was gastric resection. Caudell[3] attempted to settle the question of who first described this disease by naming it the Bozzi-Delfino-Steber syndrome. However, we agree with Caudell that an eponym is unnecessary for this medical rarity, and that the descriptive term jejunogastric intussusception has gained popular acceptance.

Shackman[8] classified jejunogastric intussusception into three types: 1, Intussusception of the afferent loop; 2, Intussusception of the efferent loop (the most common type); and, 3, a combined afferent and efferent loop prolapse. Van Prohaska[9] pointed out that only the type 2 efferent loop pro-

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Submitted September 5, 1962.

lapse through the gastrojejunal stoma has been observed in association with subtotal gastric resection. To be more precise, this entity should be called a jejuno-jejunogastric intussusception, for this is the anatomical arrangement as actually seen at operation.[5]

There is a chronic recurrent type of jejunogastric intussusception, apparently a nebulous form of this disease, which is usually diagnosed as postgastrectomy syndrome, marginal ulcer, or dumping syndrome, and sometimes it is ascribed to neurosis. The true cause of the recurrent epigastric discomfort, nausea and vomiting finally becomes apparent when a barium study is made during a period of active symptoms.

The features of acute, fulminating jejunogastric intussusception were demonstrated in a patient recently seen by us.

REPORT OF A CASE

A 56-year-old Caucasian man was admitted May 11, 1962, at 7:30 p.m., with a history of the sudden onset an hour previously, of severe pain with waves of colic in the upper abdomen. Vomiting soon followed. The pain was localized and of such severity that the patient "broke out in a cold sweat." The vomitus had the appearance of coffee grounds at first, but quickly became obviously sanguinous.

Five years previously, the patient had had a duodenal ulcer treated by subtotal gastric resection. From time to time afterward he complained of nausea, but not of pain.

On admittance the patient appeared pale and acutely ill. Blood pressure was 180/96 mm. of mercury, the pulse rate 60 and respirations 20 per minute. Oral temperature was 96.4° F. The abdomen was flat and soft, tender on deep palpation in the left epigastrium, but no mass was noted. Peristalsis was slightly hypoactive. No tenderness was elicited by rectal examination.

The hemoglobin content was 12.2 gm. per 100 cc. of blood and leukocytes numbered 7,000 per cu. mm. with 66 per cent neutrophiles. Results of urinalysis and serum amylase determination were within normal limits. X-ray films of the abdomen disclosed no free air.

Following admission, the patient vomited 200 cc. of dark bloody fluid, and an additional 200 cc. of lighter, sanguinous gastric content was aspirated with a Levin tube. Before entering the hospital the patient had been given 100 mg. of meperidine (Demerol®) intramuscularly, and another 75 mg. was administered a half hour after admission, but he continued to complain of pain and was obviously in great distress.

A diagnosis of acute jejunogastric intussusception was made and confirmed by an emergency barium study (Figures 1 and 2).

Operation was carried out five hours after admission, with the patient under spinal anesthesia. An efferent loop type of jejuno-jejunogastric intussusception was found as shown in Figure 3. It was quickly determined that tugging on the distal jejunum would tear the bowel, whereas pressure on the intussusceptum through the wall of the stomach resulted in the reduction of 30 cm. of edematous jejunum which was viable, but showed early vascular changes of strangulation. The previous operation had been a subtotal gastric resection with an antecolic, antiperistaltic, Polya gastrojejunostomy. The jejunum opposite the stoma was dilated three times normal size. No attempt was made to fix the efferent loop to prevent a recurrence of the prolapse.

The convalescence was uneventful, and the patient was discharged on the fifth postoperative day.

DISCUSSION

The etiology of jejunogastric intussusception is conjectural, but there is no question about the mechanical features as observed at operation. Unlike some forms of isoperistaltic intussusception seen in the ileocecal area, never in retrograde jejunogastric intussusception has an anatomical or pathological defect, such as a diverticulum or a polyp, been reported as the initiating factor in the telescoping of the bowel. This complication of gastric operation is most readily explained as an accident in the presence of two physiological situations distal to a gastrojejunal stoma. Antiperistalsis normally occurs in the second and third portions of the duodenum, and in humans reverse waves can be seen during the roentgen examination.[1] Obviously, reverse peristalsis must also take place in the efferent limb of a gastrojejunostomy or the disease under discussion could not occur. Secondly, a compensatory dilatation of the jejunum opposite the stoma, and extending for a variable distance into the efferent loop, is a well-recognized roentgen finding and is easily demonstrated at operation, as in the case here reported. These two physiological conditions lend themselves to jejunogastric intussusception. The rarity of this complication attests the accidental nature of its inception; and this explanation is given further credence by the fact that recurrence following surgical reduction was reported in only two instances in the cases reviewed by Bettman,[2] gastroenterostomy having been the initial operation in both cases.

The symptoms and signs of acute jejunogastric intussusception are classical. The characteristic clinical features are sudden onset of colicky, epigastric pain, followed by vomiting and hematemesis in a patient who has had gastric resection or gastroenterostomy. The pain is usually severe and localized. (In the case here reported the pain was poorly controlled by opiates.) The abdomen is soft since the bowel is compromised intraluminally and there is no peritoneal irritation. Tenderness is present on deep palpation in the epigastrium, and a mass may be palpable if the previous operation was gastroenterostomy. After gastric resection, the stomach remnant lies under the left costal margin, and a mass is

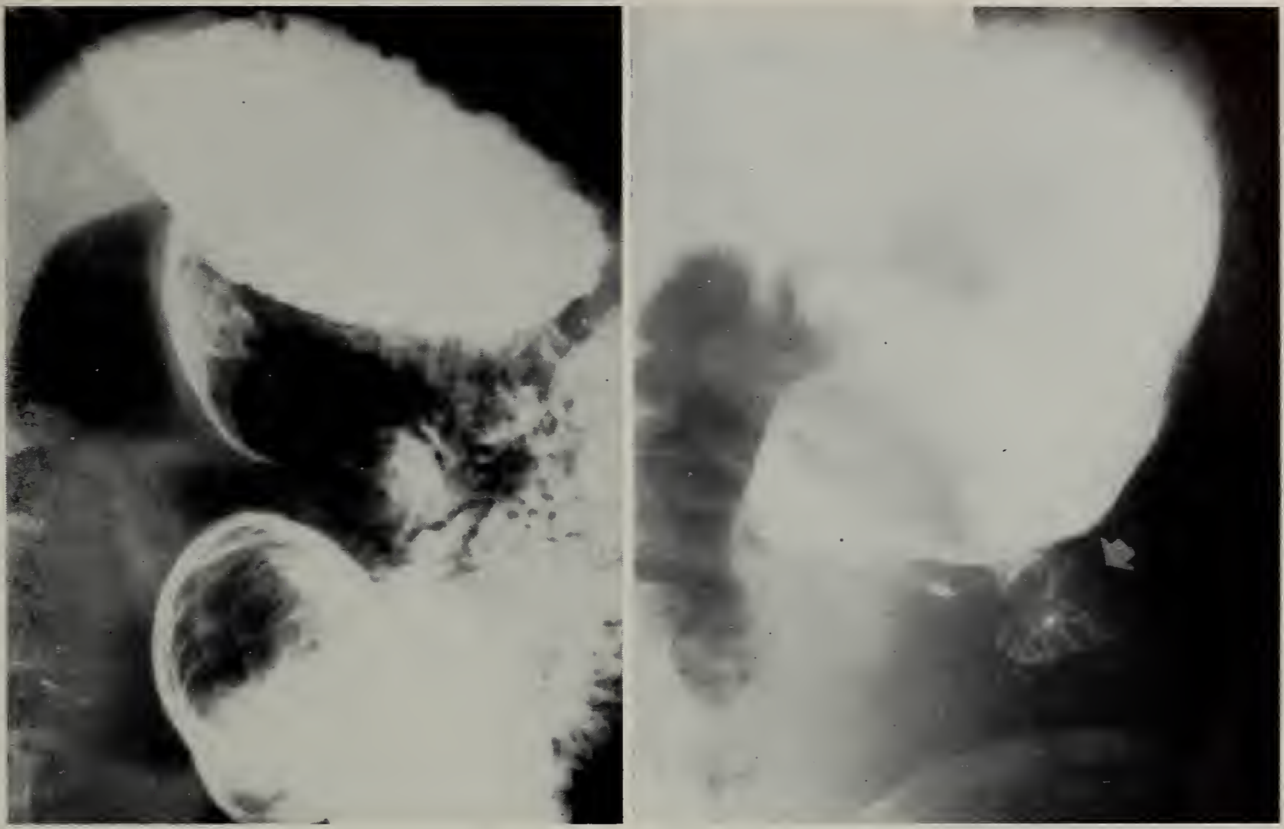
Figure 1.—*Left,* routine barium study of stomach following subtotal gastric resection, taken six months before patient's admission. *Right,* emergency barium study taken shortly after patient's admission with acute jejunogastric intussusception. The stomach remnant is now dilated and contains a filling defect easily recognized as a coil of jejunum. A trickle of barium has entered the afferent loop of the jejunum (arrow).

less likely to be found. In the early stages, peristalsis is normal.

The hematemesis is due to venous engorgement of the trapped loop of intestine. It may not alter the hemoglobin determination significantly. The pathognomonic finding is a filling defect of the stomach, with the characteristics of jejunum, seen after a barium swallow.

The diagnosis rests upon an awareness of this pathological entity, since it is easily confirmed by roentgen examination. In the reported cases of jejunogastric intussusception the usual initial diagnosis was high intestinal obstruction or bleeding marginal ulcer. However, hematemesis is a rare symptom in high obstructions, since bloody bowel content is ordinarily seen in obstruction of the gangrenous, closed-loop type and the vomitus consists of intestinal fluids proximal to this loop. The causes of hematemesis, on the other hand, are rarely accompanied by sudden, colicky pain severe enough to require opiates for relief and suggestive of a bowel obstruction. Of course, the all-important barium examination must be done as an emergency procedure, and must not await the routine schedule "the following morning." Once the scout film of the abdomen has established that the site of the obstruction is not in the colon, no harm is done by ingestion of barium.

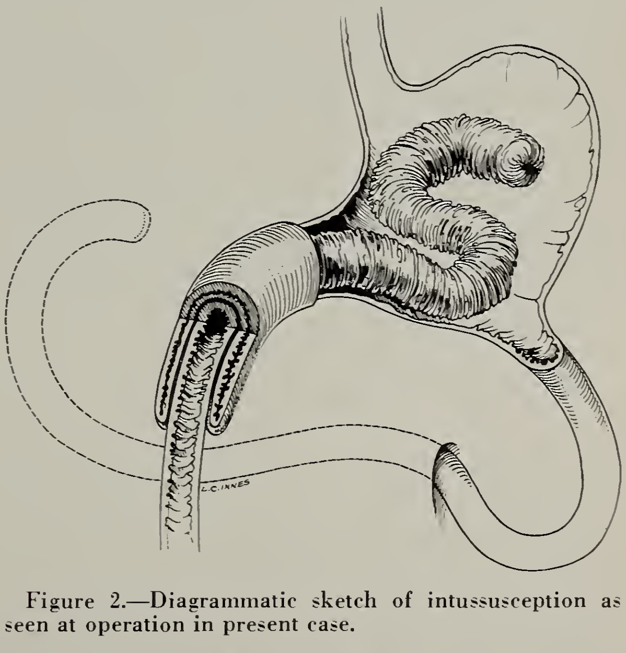
Figure 2.—Diagrammatic sketch of intussusception as seen at operation in present case.

The treatment is surgical and it must be prompt for optimal results. A delay in diagnosis doubly jeopardizes the patient, since additional time will be required to overcome fluid, electrolyte and blood volume deficits incidental to vomiting and gastric suction. This additional delay will often result in gangrenous changes of the intussusceptum, requiring bowel resection, which increases the morbidity and mortality. At operation the prolapsed loop should be massaged out of the stomach by gentle pressure. In the present case it was impossible to reduce the intussusception by a reasonable amount of traction on the jejunum.

There is a striking similarity between jejunogastric intussusception and the more frequently encountered, and recognized, ileocolic intussusception of infants. Waves of colicky pain are present in both ileocolic and jejunogastric intussusception. The engorged ileum gives rise to blood in the stool ("currant jelly stool") and the prolapse of the jejunum results in hematemesis or the aspiration of bloody fluid by gastric suction. A mass may be palpated in either disease. Roentgen investigation easily establishes the diagnoses, although the barium study cannot be expected to be of therapeutic value in jejunogastric intussusception as it is in ileocolic intussusception. Early diagnosis and treatment of each entity usually eliminates the necessity for bowel resection. Finally, traction on the small bowel during the operative procedure for either disease, in attempting to reduce the intussusception, will lead to disaster. Reduction is accomplished in each case by pressure on the intussusceptum through the walls of the intussuscipiens.

SUMMARY

A case of acute retrograde, jejunogastric intussusception is reported. It is an unusual complication of gastric operations. Without surgical intervention the condition is fatal; unless treatment is prompt, mortality and morbidity rates are high.

Jejunogastric intussusception should be seriously considered in any patient with a previous history of gastroenterostomy or gastric resection who has the usual symptoms of high intestinal obstruction plus hematemesis, with or without an epigastric mass.

As with its counterpart, ileocolic intussusception, barium studies to confirm the diagnosis should be performed on an *emergency* basis. The pathognomonic roentgen findings will lead to prompt operation and, usually, reduction of the intussusception without necessity for bowel resection.

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Dubin-Johnson Syndrome

Report of a Case in a Korean Woman

DUANE S. SMITH, *M.D.*, Covina

IN 1954, Dubin and Johnson[4] and Sprinz and Nelson[7] described a new clinicopathological entity characterized by abdominal pain, recurrent jaundice and an unidentified pigment in the liver. The familial nature of the disorder is well documented,[1,8] and the prognosis is uniformly good.

Dubin-Johnson syndrome is distinct from Gilbert's disease, but has several similar features and may represent a quantitative variation of the Rotor syndrome.

Although most cases to date have occurred in Caucasians, two have been reported in Negroes and one in a Korean man.[2,3,6] The purpose of this report is to record a case in a Korean woman.

REPORT OF A CASE

A 29-year-old Korean woman was first seen at the Magan Clinic on May 8, 1961, with complaint of nausea, crampy lower abdominal pain, and diarrhea. In 1958, while the patient was pregnant for the second time, scleral icterus was noted but no abdominal symptoms were present. The pregnancy terminated uneventfully, but two months later nausea, abdominal pain and diarrhea developed abruptly. The diarrhea was annoying and was characterized by approximately five watery but normal colored stools daily. Scleral icterus was again noted by the physician who examined her. In roentgen studies of the upper gastrointestinal tract no abnormalities were noted except for delayed gastric emptying. Cholecystography with the contrast medium ingested was attempted, but the gallbladder was not visualized. A second attempt using twice the usual dosage of contrast medium was also unsuccessful. On January 22, 1959, cholecystectomy and liver biopsy were carried out. The common bile duct was not dilated. The gross liver specimen was described as dark grey-green, and the microscopic sections were interpreted as showing bile stasis. The gallbladder was histologically normal.

Symptoms persisted after operation and the patient consulted another physician. A tentative diag-

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From the Department of Medicine, The Magan Medical Clinic, Covina.

Submitted June 12, 1962.

nosis of chronic ulcerative colitis was made, and triamcinolone in a dose of 4.0 mg. four times daily was prescribed. Diarrhea lessened, but the crampy lower abdominal pain persisted. During more severe episodes of pain and diarrhea, the urine was dark orange. No abnormalities were seen in x-ray films of the upper gastrointestinal tract, in a barium enema study, in an excretory urogram or on proctosigmoidoscopic examination. Scleral icterus was again noted by the attending physician, and the patient was referred to the author for further evaluation.

Questioning elicited that a previous pregnancy had terminated in spontaneous abortion. Both parents were living in Korea and unavailable for study but were reported to be in good health with no history of jaundice or dark urine. The patient had no siblings. Her three-year-old daughter was in good health.

On physical examination the patient appeared to be in no distress. The sclerae were not icteric. The liver edge was palpated 3 cm. below the right costal margin at the midclavicular line, and was minimally tender.

Hemoglobin content was 13.6 gm. per 100 ml. of blood. Leukocytes numbered 6,700 per cu. mm.—72 per cent neutrophils, 26 per cent lymphocytes, 1 per cent monocytes, and 1 per cent eosinophils. The erythrocyte sedimentation rate (Wintrobe) was 14 mm. in one hour. Retention of sulfobromophthalein (5.0 mg. per kilogram of body weight) was 13 per cent at 45 minutes. The total serum bilirubin was 2.9 mg. per 100 ml., with 1.5 mg. direct-reacting. The albumin was 4.3 gm. and the globulin 3.1 gm. per 100 ml. Results of routine urinalysis were normal. The urine was free of bilirubin. The reticulocyte count and values for cephalin cholesterol flocculation, for serum glutamic oxalacetic and pyruvic transaminases and for cholesterol were all within normal limits.

The original liver biopsy slide (Figure 1) was reviewed and found to contain coarse brown pigment granules of the parenchymal cells in a centrilobular distribution. The bile ducts were normal. The pigment stained strongly with periodic acid-Schiff reagent (Figure 2) but did not stain for iron.

DISCUSSION

Chronic idiopathic jaundice (Dubin-Johnson syndrome) is predominately a disease of young adults. Symptoms include chronic or intermittent jaundice, abdominal pain, weakness, nausea, vomiting, anorexia and diarrhea. The most common signs are tenderness and enlargement of the liver, and dark urine.[3] Symptoms are precipitated or aggravated by pregnancy, alcoholism, surgical procedures and intercurrent disease.

Although diarrhea has been reported in a minority of cases, it was a prominent symptom in the present case and prompted a diagnosis of chronic ulcerative colitis. Despite clinical icterus during pregnancy, the patient felt well and did not have abdominal symptoms until two months postpartum. The first pregnancy terminated in spontaneous abortion, which relates to Dubin's[3] observation of apparently increased incidence of abnormal pregnancy in this syndrome.[3]

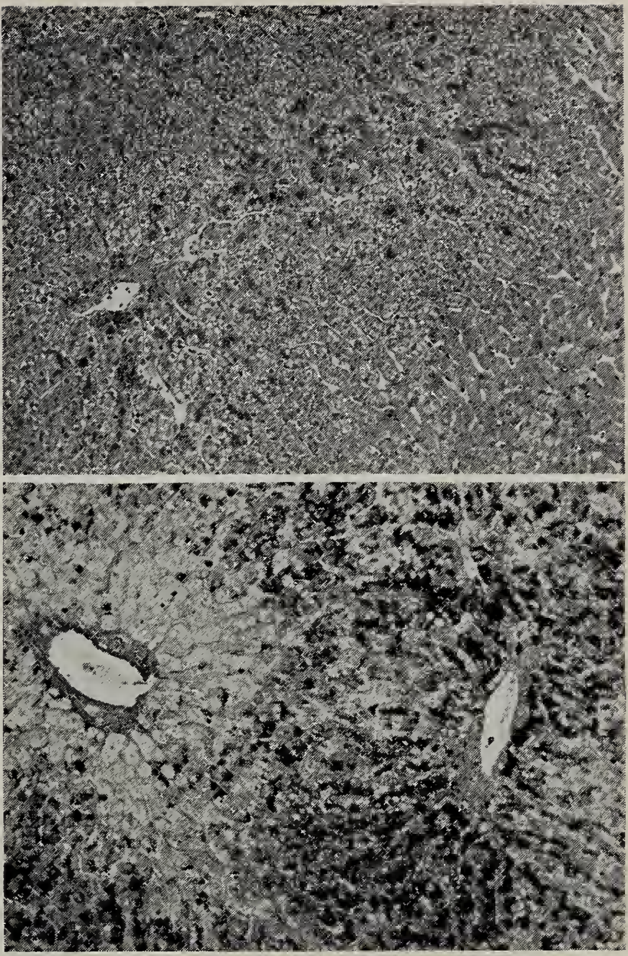

Figure 1.—Biopsy specimen showing (*above*) pigmentation typical of chronic idiopathic jaundice. Magnification, ×65. *Below* (same specimen, ×150) showing affinity of the pigment for periodic acid-Schiff stain.

The results of laboratory studies in this patient were characteristic of chronic idiopathic jaundice. Mild hyperbilirubinemia was present, with most of the pigment in the direct-reacting fraction. There was slight retention of sulfobromophthalein; and the cephalin cholesterol flocculation was normal. The flocculation studies characteristically give variable results. As is typical of this disease, the gallbladder could not be visualized by ingestion of contrast medium.

The biopsy specimen of liver showed the characteristic centrilobular distribution of the unidentified pigment, which is thought to be related to lipofuscin. In this case the pigment showed an affinity for periodic acid-Schiff stain. Lipofuscin uniformly stains strongly with periodic acid-Schiff stain while the unidentified pigment stains variably. Electron micrographs of the unidentified pigment and lipofuscin are distinctly different.[5]

Palmer and Choi described a case of chronic idiopathic jaundice in a 37-year-old Korean man who had recurrent episodes of "yellow urine" and scleral icterus, beginning at age 23.[6] The diagnosis was confirmed by percutaneous liver biopsy. A brother had been jaundiced for ten years.

The basic defect in this disorder remains obscure. A partial block at the biliary pole of the hepatic cell has recently been postulated.[5]

The clinical course in the present case was typical of chronic idiopathic jaundice. The diagnosis should be considered in patients with recurrent jaundice, dark urine and abdominal pain. A greater awareness of this condition could prevent needless abdominal exploratory procedures, as the diagnosis is easily confirmed by percutaneous liver biopsy.

SUMMARY

A case of chronic idiopathic jaundice in a Korean woman is described. The patient sought medical attention because of annoying diarrhea.

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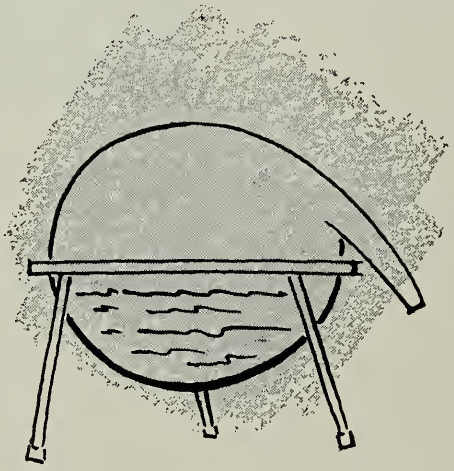

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EDITORIAL

Scientific Medical Information

The duties of the Committee on Scientific Information as they are envisaged for this department of the new Scientific Board of the California Medical Association should help in great measure toward making our association more recognizable as "physician to the community." From the committee's proper functioning, the association can be brought into a closer and warmer relationship with the public. It can originate and organize needed authoritative information on medical matters that the association can offer as a useful instrument to media whose duty it is to inform the public on matters of health and disease. The service it provides could also be of value to various governmental agencies concerned with matters of health, and to the various voluntary organizations that have been formed for the purpose of eradicating or diminishing the impact of certain diseases. More, within our own family, the committee can perform a useful service to other C.M.A. committees and commissions and to individual members of the association who have occasional need for scientific information on medicine.

In prospectus, the Committee on Scientific Information is conceived as a body that can draw together and disseminate, from a single authoritative source, medical information that in the past has been available only piecemeal and in fragments that were impossible, except with special knowledge, to fit together into a fully understandable whole. In the past, scientific information in the field of medicine, sometimes sought in the most pressing of circumstances, has had to be obtained from such diversified sources as departments of public health, medical schools, the National Institutes of Health, organizations of medical specialties, the voluntary health organizations and occasionally individual physicians. Often no one source could supply the whole information needed and the persons or organizations needing the information were not always qualified either to judge the completeness of what had been obtained or to know where to look further.

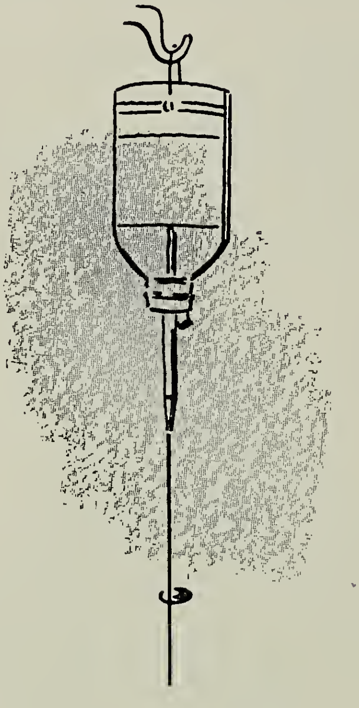
That a good source of full, well organized, carefully appraised medical information is a useful public service was demonstrated clearly not long ago when doubt as to the safety of the Sabin vaccine arose during the recent drive for mass immunization against poliomyelitis. The marshalling of information at that time, the careful appraisal by qualified persons of what was known medically and statistically, and the equally careful and calm reporting of all this by the news media, brought sense to a situation that otherwise might have come to panic and the destruction of an outstanding program for the public good. That the job was well done is now a splendid, and relieved, memory. But it could have been done more easily had there been a body organized specifically with the idea that it could be called upon to provide the best available information in an orderly manner even in crucial moments.

It is just such a body that the Committee on Scientific Information is expected to make of itself. It can be eminently valuable as a source of sound information that the association can disseminate through C.M.A. channels such as the Bureau on Communications. In all matters involving C.M.A. policy, the committee will, of course, seek the approval of the Council of the C.M.A. Through its dealings with sources of information and seekers of information, the committee can perform a recognizably worthwhile service not only to the general membership of our association but to other organizations within the medical community.

The committee as it is envisaged will serve as a reservoir for medical fact, as an appraiser insofar as possible of new developments in medicine, and as a reporter drawing upon special sources for special information when legitimately called upon to do so.

Obviously such a function cannot go swiftly from bud to full fruition. The proposed service cannot be expected to begin tomorrow or next day. Study and organization and hard work are ahead. The committee must establish its sources of information and adopt a system of codification not only for quick availability of stored knowledge but for the orderly addition of what is new as it relates to or modifies the general body of existing information. Members of the committee will have to fit themselves to tasks that they can expect to face.

It is to be hoped that with this committee as an instrument the California Medical Association can better serve the responsibility it assumes for promoting the public health; can make itself more useful, and even better known, to its own membership; can have continuing friendly relations with groups and agencies to which it turns for information and for which it supplies information on request; and can, to serve an ideal, take a position of leadership where a matter of health is concerned and leadership is needed.



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 488th Meeting of the Council, San Francisco, Hilton Inn, February 16, 1963.

The meeting was called to order by Chairman Anderson in the Hilton Inn, San Francisco International Airport, on Saturday, February 16, 1963, at 10:00 a.m.

Roll Call:

Present were President Wheeler, President-Elect Sherman, Speaker Doyle, Vice-Speaker Heron, Editor Wilbur, Secretary Hosmer and Councilors MacLaggan, Wilson, Todd, Quinn, Bullock, O'Connor, Ham, Rogers, Dalton, Murray, Davis, Miller, Watts, Campbell, Morrison, Kaiser, Anderson, Dozier, Cosentino and Grunigen.

Absent for cause, Councilor O'Neill.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Clark, Marvin, Whelan, Edwards and Bowman, Doctor Batchelder and Mrs. Griffith of C.M.A. staff; Messrs. Hassard and Huber of legal counsel; Messrs. Read, Salisbury and Putnam of the Public Health League; county executives Scheuber of Alameda-Contra Costa, Geisert of Kern, Field and Baker of Los Angeles, Brayer of Riverside, Donmyer of San Bernardino, Nute of San Diego, Neick of San Francisco, Wood of San Mateo, Donovan of Santa Clara, Brown of Sonoma, Bailey of Tulare, Rideout of Butte-Glenn, Grove of Monterey and Rosenthal of Forty First; Doctor Malcolm Merrill, State Director of Public Health, Doctor Dan Lieberman of the State Department of Mental Hygiene, Doctor Lester McDonald and Mrs. Eunice Evans of the State Department of Social Welfare; Mr. Frank R. McDougall of the California Hospital Association; Mr. John Pompelli of the American Medical Association; Messrs. Paolini, Heller, Nyron, Crane, Potloff, Wahlberg and L'Huereux of California Physicians' Service; Doctor Warren Bostick, Doctor Dan O. Kilroy and others.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 487th Council meeting, held January 11, 1963, were approved.

2. *Membership:*

(a) A report of membership as of February 13, 1963, was presented and ordered filed.

(b) On motion duly made and seconded, five delinquent members who had brought their dues up to date were voted reinstatement.

(c) On motion duly made and seconded in each instance, 29 applicants were voted Associate Membership. These were: E. L. Armstrong, Murdock S. Bowman, Walter L. Byers, James E. Elliot, Michael L. Kamm, Alameda-Contra Costa Counties: Stanley Edward Abbott, Merton J. Alexander, Harold L. Briskin, B. Lamar Johnson, Jr., Luigi Mastroianni, Jr., Lawrence D. Longo, Charles R. Noziska, Marshall Jerome Orloff, Robert S. Ozeran, Franklin J. Pollock, Irving Rappaport, Los Angeles County; Robert T. Gardner, Jr., Sacramento County; Thomas F. Judefind, San Bernardino County; Owen W. E. Nowlin, Robert W. Vance, San Diego County; Ethlyn Countryman, Richard N. Jacobs, Lester B. Kinnamon, Myrna F. Loth, Perry A. Olsen, Joseph

OMER W. WHEELER, M.D.	President
SAMUEL R. SHERMAN, M.D.	President-Elect
JAMES C. DOYLE, M.D.	Speaker
IVAN C. HERON, M.D.	Vice-Speaker
CARL E. ANDERSON, M.D.	Chairman of the Council
BURT L. DAVIS, M.D.	Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D.	Secretary
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Sklenar, Eugenie K. Vitols, Santa Clara County; Sara Bennett Mann, Sonoma County; Robert A. Dexter, Tulare County.

(d) On motion duly made and seconded in each instance, 21 members were voted Retired Membership. These were:

Harry H. Appeldorn, J. R. Sharpsteen, Alameda-Contra Costa Counties; Homer Albert Beal, Claire Brownsberger, Solomon Bruson, Chester E. Cornell, William A. Dorsch, Louis M. Earle, Edward G. Eisen, George Wm. Groth, Jr., Moritz Handgriff, Edward F. Slavik, Clinton H. Thienes, Dean Q. Waddell, Joseph B. Williams, Los Angeles County; Julio Paez, San Diego County; David Kadesky, San Francisco County; Gordon F. Helsley, Louise Smith King, John L. Pasmore, Santa Clara County; Chester Marsh, Sonoma County.

(e) On motion duly made and seconded, 24 members were granted a reduction of dues for postgraduate study or prolonged illness.

3. *Committee for Emergency Action:*

President Wheeler reported that the Committee for Emergency Action had met with representatives of the State Department of Finance for further discussions of medical fee schedules to be used for state-financed cases.

4. *Report of the President:*

President Wheeler reported that Audio-Digest Foundation would probably make a larger contribution this year than formerly for medical education purposes. He suggested that the funds to be contributed be divided equally between the American Medical Association Education and Research Foundation and the California Medical Education and Research Foundation and that the initial use of these funds by C.M.E.R.F. be to complete a commitment to the California College of Medicine for a student loan or scholarship fund. On motion duly made and seconded, these suggestions were voted approval.

Doctor Wheeler also reported that all hospitals in Riverside County had requested and received inspection under the plan devised by the Liaison Committee to the California Hospital Association.

5. *Committee on Committees:*

Doctor Sherman proposed, in behalf of the Committee on Committees, the formation of a special committee to deal with state officials on establishment of a fee schedule for cases financed by the state. On motion duly made and seconded, a committee to include Doctor Francis E. West, chairman, and Doctors Robert C. Combs, Paul I. Hoagland, Arthur Howard and Homer C. Pheasant was approved.

On motion duly made and seconded, the committee's proposal that Doctor Wayne Pollock be named as C.M.A. representative on an advisory committee to the California College of Medicine was approved.

On motion duly made and seconded, the committee's proposals for a Liaison Committee to the State Board of Medical Examiners was approved. The committee will include Doctors Albert C. Daniels, chairman, Keith P. Russell, Bert L. Halter, Joseph Cosentino, Thomas E. Hanigan, Glenn A. Pope and Harold A. Neibling.

On motion duly made and seconded, Doctor Lawrence R. Loftus was approved as northern California medical Advisor to Selective Service, to succeed Doctor Dave F. Dozier.

The committee reported a slate of nominees for election to the Board of Trustees of California Physicians' Service, which, on motion duly made and seconded, was approved for presentation to the House of Delegates. This slate is as follows: Mr. Ransom M. Cook, Doctor Herman H. Stone and Doctor William H. Thompson for reelection; Doctors Stanley R. Truman, Carl E. Horn and George C. Murray for election.

6. *Scientific Board:*

Doctor Dwight L. Wilbur presented a proposed list of members of the Scientific Board and its committees, except for members of the Committee on Cancer. On motion duly made and seconded, the list of members of the Scientific Board and its committees as presented was approved.

7. *House of Delegates:*

Doctor Doyle, Speaker of the House of Delegates, reported on plans for the 1963 Annual Session and suggested that reference committees be increased to five members from the present three. On motion duly made and seconded, it was voted to approve a Bylaw amendment which would call for reference committees of the House of Delegates to be composed of "three or more" members.

8. *State Department of Public Health:*

(a) Doctor Malcolm Merrill, State Director of Public Health, reported that an incoming passenger on an overseas airline had been tentatively diagnosed as having smallpox and that six California passengers on the plane had been located and vaccinated. (The case later developed to be chickenpox.)

(b) Doctor Merrill reported that the allocation of federal Hill-Burton funds for hospital construction has reached a point where determination must be made on allowing funds for new construction or for hospital modernization. Regional hospital planning is being given full consideration but no decentralization of authority to allocate funds is planned.

(c) More than 20,000 stray dogs have been destroyed in the San Diego and Mexican border area as a means of controlling the spread of rabies. In addition, a large number of dogs have been immunized against rabies.

(d) No cases of Asian flu have been identified in California to date, although a high degree of school and industrial absenteeism has been noted due to upper respiratory illness.

(e) Over 4,000,000 Californians have now received Type III polio vaccine, a decline from the number in the same areas who received the first two types. One case of polio following Type III vaccination has been found in the time limit compatible with infection from the vaccination.

9. *State Department of Mental Hygiene:*

Doctor Dan Lieberman, deputy director of the State Department of Mental Hygiene, reported that an insurance coordinator has been appointed to work with underwriters to secure inclusion of mental illness in voluntary health insurance coverage.

The department, Doctor Lieberman reported, is most interested in the licensing of hospital and nursing home beds for mental cases and about 10,000 beds have been licensed to date. The department is also working with the state medical schools to gain additional provision of beds for mental cases.

10. *State Department of Social Welfare:*

Mrs. Eunice Evans of the State Department of Social Welfare reported on the numbers of cases under current welfare programs, the report showing a small decrease on a per capita basis, with needy blind cases decreasing and needy disabled cases increasing. For December, 1962, she reported that 33 per cent of the cases accepted on the M.A.A. program had not previously been on welfare rolls.

11. *California Physicians' Service:*

Doctor John G. Morrison, board chairman of C.P.S., reported that three resolutions had been prepared for introduction into the House of Delegates and asked that one, which would establish the board chairman of C.P.S. as an official liaison representative to the Council, be jointly sponsored by the Council. On motion duly made and seconded, such sponsorship was voted.

Doctor Morrison also reported that C.P.S. had transacted more than $82,000,000 of business in 1962, with $53,000,000 of this amount coming from its commercial programs and $23,000,000 from government programs for which C.P.S. is fiscal administrator. The stabilization fund is in good condition, he reported, and the conversion of A and B fee schedules to the 1960 Relative Value Studies basis is about complete. Administrative costs are running at 10.5 per cent.

12. *Medical Executive Conference:*

Mr. Frederick O. Field reported that a special committee of the Medical Executives Conference has developed a format for a statewide plan for physicians to develop self-retirement programs under the Keogh Law. Federal regulations governing this program have not yet been announced.

13. *California Hospital Association:*

Mr. Frank R. McDougall, president of the California Hospital Association, reported that his association has developed a program of speakers to explain to various audiences the story of health care under private auspices. He also announced that the association will invite a C.M.A. representative to meet with the hospital board.

14. *Committee on Legislation:*

Doctor Dan O. Kilroy, chairman of the Committee on Legislation, reported on several matters which are or may come before the state Legislature and sought instructions.

(a) A bill to permit the formation of professional corporations, provided the professional practice act will allow such corporations. Doctor Kilroy asked if enabling legislation, amending the Medical Practice Act, should be introduced. A motion made and seconded, that the Council authorize the committee to seek introduction of such a measure, was deferred until such time as the Commitee on Professional Welfare can study and make recommendations on this proposal.

(b) The committee recommended that action be deferred on several bills amending the dangerous drug and narcotic laws until the Committee on Dangerous Drugs makes recommendations to the Council.

(c) A proposal by the Department of Mental Hygiene that patients in mental disease hospitals be made eligible for M.A.A. care was referred to the Committee on Mental Health for study and recommendation.

(d) On motion duly made and seconded, it was voted that C.M.A. and C.P.S. offer all assistance to a committee which may be formed by the Legislature for the study of all costs of medical and hospital care, including health care and health insurance, its cost, etc.

(e) On motion duly made and seconded, it was voted to support AB 180, a bill to place a penalty on physicians utilizing out-of-state clinical laboratories which do not meet California standards.

(f) On motion duly made and seconded it was voted to take no position on a measure which would ban all tobacco advertising in school publications, and to so advise the American Cancer Society.

(g) Doctor Kilroy reported that SB 333 and SB 374 have been introduced in behalf of the Association. These measures would amend the Labor Code and other codes to provide that medical fees to be paid or established by the state and its agencies be at the usual level of such fees for citizens not under state sponsorship.

(h) Doctor Kilroy suggested that the Association look into the operations of clinical laboratories not operated by physicians. On motion duly made and seconded it was voted to refer this to the Commission on Community Health Services.

15. *Commission on Public Agencies:*

Doctor MacLaggan reported that a move is under way to effect a merger in the licensing of registered nurses and licensed vocational nurses. On motion duly made and seconded it was voted to reaffirm earlier opposition to such a program.

Doctor MacLaggan also reported that the proposed state budget proposed to eliminate the advisory board to the State Board of Nurse Examiners. On motion duly made and seconded it was voted to oppose the dissolution of this board.

On motion duly made and seconded it was voted to support a bill to transfer the responsibility for maintenance of disaster medical facilities (mobile hospitals) to the State Department of Public Health.

16. *Commission on Medical Services:*

Doctor Murray requested, in his own behalf and not for the commission, that authority be granted to the commission to investigate further the most effective manner in which to publicize "The Components of an Adequate Health Insurance Program." On motion duly made and seconded this subject was rereferred to the Commission.

17. *Finance Committee:*

Doctor Davis requested Council approval of a proposed budget for the 1963-1964 fiscal year, copies of which had been distributed at the previous meeting. On motion duly made and seconded, it was voted to approve the proposed budget and submit it to the House of Delegates.

18. *Committee on Cancer:*

Doctor Davis, chairman of the Committee on Cancer, reported that the revision of "Cancer Studies," a publication of the committee, was about half completed and that work is progressing on the preparation of the remaining chapters.

Doctor Davis also reported that the pathologists who attend the semiannual slide conferences had agreed to contribute $25 per meeting to the maintenance of the tissue tumor registry which is jointly subsidized by the committee and by the American Cancer Society, California Division. Proceeds from these payments will be equally divided between the two organizations as an offset to the costs involved.

19. *Ad Hoc Committee on Bryan Report:*

Doctor Wheeler requested approval of the report of an ad hoc committee to review the Bryan report. Copies of the committee report have been in the hands of the Councilors for several weeks. On motion duly made and seconded the committee report was approved.

20. *Commission on Medical Services:*

Doctor Murray requested approval of a renewal of the contract with the Department of Defense for medical care of dependents of military personnel. On motion duly made and seconded, the contract renewal was approved.

21. *Commission on Community Health Services:*

Mr. Collins, in behalf of Doctor Harold Kay, chairman of the Commission on Community Health Services, reported that the commission is prepared to furnish speakers on thermonuclear warfare but believed it was inadvisable at this time to publicize the availability of such speakers. The report was ordered received.

Mr. Collins also reported that suggestions had been made to expand the scope of a survey of component societies' community health programs. It was agreed that this survey should continue along its original lines and not be expanded at this time.

For the Committee on Traffic Safety, a resolution was presented, asking the state Legislature to request the automobile industry to incorporate all known safety factors in all new cars. On motion duly made and seconded, this resolution was approved.

22. *Bureau on Communications:*

Doctor Warren L. Bostick, chairman of the Bureau on Communications, called attention to the new typographical format of *Newsletter* and requested suggestions for further improvements. He stated that the bureau would make a major effort of publicizing the reaffirmation by the Association of the value of the handling of government medical care programs by California Physicians' Service.

Doctor Bostick further reported that pamphlets describing health care voluntary insurance coverage for the over-65 age group were being produced and would be given wide distribution.

Doctor Bostick also discussed the request of the A.M.A. for formation of a "key man" organization in the congressional districts and made several recommendations for Council approval. On motion duly made and seconded, the Council approved (1) reiteration of opposition to financing of the health care of the aged through Social Security, (2) Authorization for the Bureau on Communications to establish a "key man" organization in each of the 38 congressional districts of the state, (3) this organization to be the responsibility of the Bureau on Communications, with the understanding that at the outset the costs of this program be borne by the bureau, and (4) that the Council notify the component societies of this program and request their cooperation and asssistance.

23. *Staff Report:*

Mr. Hassard reported that the proposed employment of a health educator was under study by a staff committee and that a later report would be made.

Mr. Hassard also presented a memorandum outlining the conditions under which per diem allowances for officers might be adjusted to comply with Treasury Department regulations and eliminate the need of reporting of income and expenditures by the recipient. It was agreed that Councilors be given the choice of continuing in the present plan or adjusting their receipts to match the new regulations.

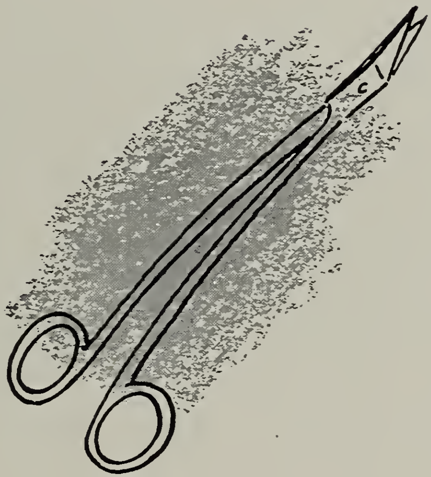
24. *Bylaw Amendment:*

Doctor Wilbur presented a proposed Bylaw amendment dealing with the Scientific Board. On motion duly made and seconded it was voted to approve this amendment for introduction in the House of Delegates by the Council.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 4:50 p.m.

Carl E. Anderson, M.D., *Chairman*
Matthew N. Hosmer, M.D., *Secretary*



No. 17*

Occupational Disease in California

NOW AVAILABLE is a report entitled *Occupational Disease in California—1960*, which summarizes 18,642 physicians' reports of occupational disease among the nearly five million employees covered by the California Workmen's Compensation Law. This review is based primarily upon the *Doctor's First Report of Work Injury* which physicians are required to file with the Department of Industrial Relations.

Most occupational diseases fall into the traditional categories of skin conditions, respiratory conditions and systemic poisonings. Most frequently listed as to cause are poison oak, food products and agricultural chemicals. Half the 793 cases of systemic poisonings reported to the Department in 1960 were attributed to agricultural chemicals, mainly the organic phosphate pesticides.

Relatively few reports were received in 1960 concerning such classical agents as lead (58 reports), carbon monoxide (53 reports), carbon tetrachloride (37 reports) and mercury (10 reports), but these reports are of particular significance because the principles of environmental control to prevent occupational disease from these materials have long been well known.

Among all industry groups, agriculture had the highest rate, with 10 occupational disease reports per 1,000 workers; followed by construction, 6.2; and manufacturing, 5.1. Within the manufacturing division, the rate ranged from 1.4 reports per 1,000 workers in printing, publishing and allied industries to 16.6 reports per 1,000 workers in rubber and miscellaneous plastic products. The occupational disease rate for women employed in manufacturing is somewhat higher than for men.

In California, 29,749 men and 15,701 women of working age died in 1960 but only a very small number of these deaths (240) were attributed to occupational disease.

The data in the review points to certain areas toward which study and disease prevention should be concentrated. Some of these areas are important because of the large number of cases (dermatitis for example), others because of the potentially serious hazard to workers (organic phosphate pesticides for example), some because they represent new problems where study is needed, and still others because they reflect failure to apply well known methods of prevention and control which are often simple to carry out.

Copies of *Occupational Disease in California—1960* are available free as long as the supply lasts. Address request to: Bureau of Occupational Health, State of California Department of Public Health, 2151 Berkeley Way, Berkeley 4, California.

COMMITTEE ON OCCUPATIONAL HEALTH
CALIFORNIA MEDICAL ASSOCIATION

Comments and Questions are Welcomed by the Committee

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*This is the seventeenth of a series of articles prepared by the Committee on Occupational Health.

Prepared for the Committee on Occupational Health by the Bureau of Occupational Health, California State Department of Public Health.

In Memoriam

ALLEN, ADDIE BROWN, Los Angeles. Died February 14, 1963, in Los Angeles, aged 85, of carcinoma of the breast. Graduate of the College of Physicians and Surgeons, Medical Department, University of Southern California, 1910. Licensed in California in 1910. Doctor Allen was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

BAIRD, CHAUNCEY, San Bernardino. Died February 23, 1963, in San Bernardino, aged 73. Graduate of Columbia University College of Physicians and Surgeons, New York, New York, 1926. Licensed in California in 1930. Doctor Baird was an associate member of the San Bernardino County Medical Society.

✤

BARRETT, THOMAS F., San Carlos. Died in 1963, aged 51. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1937. Licensed in California in 1937. Doctor Barrett was a member of the San Mateo County Medical Society.

✤

BEEM, MARVEL DARLINGTON, Los Angeles. Died February 17, 1963, in Los Angeles, aged 64, of heart disease. Graduate of the College of Medical Evangelists, 1924. Licensed in California in 1924. Doctor Beem was a member of the Los Angeles County Medical Association.

✤

GEITH, CHARLES ROBERT, Escondido. Died February 21, 1963, in Escondido, aged 82. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1903. Licensed in California in 1915. Doctor Geith was a retired member of the Riverside County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

HOSMER, RAWSON FELL (R. FELL), Hollywood. Died February 11, 1963, in Los Angeles, aged 54, of ruptured esophageal varices. Graduate of the University of Southern California School of Medicine, Los Angeles, 1936. Licensed in California in 1936. Doctor Hosmer was a member of the Los Angeles County Medical Association.

✤

MURATA, CHESTER S., Gardena. Died February 22, 1963, in Torrance, aged 42. Graduate of Tulane University School of Medicine, New Orleans, Louisiana, 1947. Licensed in California in 1951. Doctor Murata was a member of the Los Angeles County Medical Association.

PARKS, ROSS VERNON, Los Angeles. Died February 21, 1963, in Chicago, Illinois, aged 57, of massive coronary infarction. Graduate of Rush Medical College, Chicago, Illinois, 1932. Licensed in California in 1936. Doctor Parks was a member of the Los Angeles County Medical Association.

✤

PAUL, FRANCIS WILLIAM, Burbank. Died in an airplane crash, February 14, 1963, aged 46. Graduate of the College of Medical Evangelists, 1941. Licensed in California in 1945. Doctor Paul was a member of the Los Angeles County Medical Association.

✤

PORTER, JOHN BECK, Seattle, Washington. Died February 6, 1963, in Seattle, Washington, aged 56, of complications following abdominal surgery. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1938. Licensed in California in 1946. Doctor Porter was a member of the Los Angeles County Medical Association.

✤

QUISENBERRY, J. R. (JAMES), Los Angeles. Died February 7, 1963, from burns received in an airplane crash, aged 48. Graduate of the California College of Medicine, 1941. Licensed in California in 1962. Doctor Quisenberry was a member of the Forty First Medical Society.

✤

ROBINSON, JOSEPH H., Corona. Died January 23, 1963, aged 80, of cerebral vascular accident. Graduate of the University Medical College of Kansas City, Missouri, 1904. Licensed in California in 1914. Doctor Robinson was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

TAMMEN, HENRY, Carlsbad. Died from injuries received in an automobile crash, February 18, 1963, aged 48. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1943. Licensed in California in 1944. Doctor Tammen was a member of the San Diego County Medical Society.

✤

YOUNG, ERWIN LEROY, La Jolla. Died February 15, 1963, in La Jolla, aged 63. Graduate of Northwestern University Medical School, Chicago, Illinois, 1932. Licensed in California in 1936. Doctor Young was an associate member of the San Diego County Medical Society.

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Woman's Auxiliary to the California Medical Association

Contrary to popular belief, physicians and their families *do* meet with unexpected reverses due to financial difficulties, illness, and other catastrophes. How reassuring it is to know that during these times of financial distress the Physicians' Benevolence Fund can be of assistance.

How well informed are *you* about Physicians' Benevolence? One dollar of your dues goes each year into this worthy Fund. We Auxiliary members also contribute, on a voluntary basis, and most of the county Auxiliaries participate actively in this endeavor. A third source of revenue is earnings on investments.

The Physicians' Benevolence Fund is intended to serve as a *temporary* aid to needy physicians and their families. It is not set up as a retirement program and it is not an insurance plan. Assistance is intended to supplement, and not supplant, other income of the recipient.

The Physicians' Benevolence Committee was organized in 1940 by the California Medical Association. This Committee was disbanded in 1955, and a non-profit corporation was formed. In May 1956, your Delegates passed a Constitutional Amendment approving the Physicians' Benevolence Fund, Inc., and this organization has since carried on the project.

The operations committee for Physicians' Benevolence is made up of a group of dedicated California Medical Association members, the funds are administered by the Council, and all operating details are handled by the California Medical Association staff. The Fund's only cost is a modest auditors' fee each year.

The procedure for applying for aid under Physicians' Benevolence is quite simple. Any County Society or Auxiliary discovering a case of financial need by a physician or members of a physician's family should contact Mr. John Hunton, Executive Secretary of the California Medical Association. A brief questionnaire is then sent to the physician or Auxiliary member who is most familiar with the problem and who can tactfully provide the facts in the case. These may include whether other sources of income have been approached, whether any other potential assets are available, and what the actual needs are. The completed form and an authorization request is then forwarded to the operation committee; this group of physicians evaluates the merits of the case, and decides on the amount and duration of assistance to be granted. As soon as the authorization is approved by the committee, a check is mailed from the California Medical Association office. In case of real emergency, funds can be made available prior to the investigation. All cases are reviewed periodically until the need for aid has ceased.

We of the Woman's Auxiliary pledge to continue our active support, with you, so that this fine program for our own medical family may continue to meet the need.

Mrs. Richard W. Eells
Chairman, Physicians' Benevolence
Woman's Auxiliary to the
California Medical Association

INFORMATION

Participation of California Physicians In Emergency Medical Care Panels

A Report of the Bureau of Research and Planning, California Medical Association

> Over 40 per cent of all California physicians belonged to some type of emergency medical care panel during 1961. Of these physicians, almost 60 per cent were affiliated with hospital panels and 27 per cent with County Society panels.
>
> Other findings indicate the following facts about physician participation in emergency care panels:
>
> ... 84 per cent of physicians who participate do so on a voluntary basis, with 16 per cent belonging to panels on a compulsory basis.
>
> ... higher than average per cents of physicians belong to such panels in rural areas.
>
> ... compulsory membership is more prevalent in hospital panels than in County Society panels.

Analysis of data recently collected by the Bureau of Research and Planning shows that an estimated 10,000 California physicians belonged to emergency medical care panels as of the latter part of 1961. This was slightly more than 40 per cent of the 25,233 physicians practicing in the State at that time. These totals include physicians in hospital service, teaching, administration, research, and those employed by governmental agencies, as well as physicians in private practice. They exclude physicians who are retired and those not engaged in the practice of medicine. It is assumed that few physicians in teaching, administration and research, and of those employed by governmental agencies, belong to emergency care panels. The data were not analyzed by type of practice, however, since overall totals would not be greatly affected by the exclusion of these categories.

The data also indicate that almost 59 per cent of physicians who belong to such panels do so through hospitals and 27 per cent through their respective county medical society. A small proportion of these physicians (1.7 per cent) indicated that they belong to panels through both their county society and through a hospital. The remaining 15 per cent were affiliated with panels of other types or did not further specify type of panel.

Eighty-four per cent of physicians who belong to such panels did so on a voluntary basis, whereas 16 per cent stated that their participation was compulsory. The breakdown of membership through hospitals and county societies for physicians who belong to panels voluntarily is similar to that for all physicians (57.1 and 29.6 per cent, respectively). The distribution of compulsory affiliation, however, shows a somewhat different pattern, with almost 68 per cent belonging through hospitals and 14 per cent belonging through their County Society. (See Table 1 for distribution of participants.)

Participation in panels appears to be substantially greater in primarily rural areas, according to data shown in Table 2. Whereas only 38 per cent of physicians in urban counties participate in panels, more than 60 per cent in rural areas do so. Differences in agency of membership also exist, with a higher proportion in rural areas belonging to hospital panels and, conversely, a lower proportion belonging to county society panels.

Another difference (not shown in the tables) between rural and urban areas is the distribution of membership in emergency care panels as to reason for such membership, whether voluntary or compulsory. In rural areas, compulsory membership is almost twice as prevalent as in urban areas (26.5 per cent against 13.9 per cent). Part of this difference can be explained by the fact that compulsory membership is more closely correlated with hospital

TABLE 1.—*Per Cent of Physicians Belonging to Emergency Care Panels, California, Fall, 1961*

Agency of Membership	84 Per Cent Voluntary Membership	16 Per Cent Compulsory Membership
County Society only	27.6	14.0
Hospital only	55.1	67.8
County Society and Hospital	2.0	....
Other and unspecified	15.3	18.2
Total	100.0	100.0

TABLE 2.—*Physician Participation in Emergency Care Panels and Breakdown by Agency of Membership of Participants, by Type of Area, California, 1961*

	Type of Area	
Agency of Membership	Metropolitan Counties* Per Cent	Non-Metropolitan Counties† Per Cent
Total participation	38.0	60.3
County Society only	26.1	21.8
Hospital only	56.2	62.2
County Society and Hospital	1.7	1.3
Other and unspecified	16.0	14.7
	100.0	100.0

*Includes the following county societies: Alameda-Contra Costa, Fresno, Kern, Los Angeles, Marin, Orange, Riverside, Sacramento, San Bernardino, San Diego, San Francisco, San Joaquin, San Mateo, Santa Barbara, Santa Clara, and Solano.

†Includes all other county societies.

panels than with other types; hospital panels, as seen in Table 2, are more prevalent in rural areas.

Among the areas of the State (by county society jurisdiction), the following show particularly high percentages of participation in emergency care panels: Inyo-Mono, 89 per cent; Yuba-Sutter-Colusa, 82 per cent; Humboldt-Del Norte, 81 per cent; Santa Cruz, 79 per cent; Tehama, 78 per cent; Shasta-Trinity, 76 per cent; Butte-Glenn, 75 per cent; Kings, 74 per cent; Tulare, 73 per cent; and Marin, 71 per cent. Among those showing below average participation are Santa Clara, 23 per cent; San Francisco, 30 per cent; Los Angeles, 34 per cent; and Alameda-Contra Costa, 36 per cent. Of note also are those areas where membership in such panels is primarily through the county society. Such cases are found in the following county societies: Kings, Marin, Sacramento-Amador-El Dorado, San Joaquin-Alpine-Calaveras-Tuolumne, Stanislaus, and Yuba-Sutter-Colusa. Each of these county societies is the agency of membership of over 50 per cent of all physicians in the area who belong to an emergency care panel.

Since the last report analyzing responses to the Study of the Characteristics of Physicians, the representativeness of sample returns has been tested. Tables showing the following distribution of all physicians in the State and of respondents have been prepared: Medical Specialty, Age, Geographic Area of Practice, and Type of Practice (both by Geographic Area and for the State).

Variations in response for each of the factors listed was extremely slight when compared with the total physician population; those which showed variation can be explained and, when necessary, such variation can be eliminated by a weighting procedure. Generally, responses can validly be considered as representative of the group which they purport to represent.

Should the reader be interested in the distribution of respondents and a comparison to the total physician population on the above listed factors, copies of the tables are available from the Bureau of Research and Planning, California Medical Association, 693 Sutter Street, San Francisco, California.

California Medical Association, 693 Sutter Street, San Francisco 2.

NEWS & NOTES

NATIONAL • STATE • COUNTY

LOS ANGELES

Dr. Edward J. Zaik, medical director of the Pacific Telephone & Telegraph Company, Los Angeles area, recently was named to the board of directors of the Industrial Medical Association. He was one of five physicians elected to a three-year term on the board.

* * *

Dr. David H. Payne, president of the Long Beach District of the Forty First Medical Society, has been appointed geographic full-time professor and chairman of the department of psychiatry at the **California College of Medicine.** Announcement of the appointment was made by Dr. Benjamin B. Wells, dean of the Los Angeles medical school.

* * *

Immediate establishment of a **Division of Research in Medical Education** at the University of Southern California School of Medicine, to be headed by Dr. Stephen Abrahamson, formerly of the University of Buffalo, was announced recently by Dr. Clayton G. Loosli, dean of the School of Medicine, and Dr. Irving R. Melbo, dean of the School of Education.

Dr. Abrahamson, a pioneer in the field of research in medical education, will hold the title of professor of education in both schools. He leaves his post as professor of education at Buffalo, where he has served since 1952.

NAPA

Dr. Theo K. Miller, who has been superintendent of Napa State Hospital for 20 years, will retire from that position July 1, he announced recently. A successor has not yet been named.

ORANGE

Dr. Russell R. Ludwick has been elected president of the **Orange County Radiology Society** and Dr. Thomas Dorsey has been elected vice president. Both practice in Anaheim. Dr. E. Nicholas Sargent, of Orange, was elected secretary-treasurer.

SAN FRANCISCO

Dr. Malcolm S. M. Watts, assistant clinical professor of medicine and assistant dean at the University of California School of Medicine, San Francisco, was elected president-elect of the American Society of Internal Medicine at the recent annual meeting of the organization in Denver. **Dr. Clyde C. Greene, Jr.,** also of San Francisco, was reelected secretary-treasurer.

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Dr. Dwight L. Wilbur, San Francisco, was one of three physicians who received the designation Master of the American College of Physicians at the organization's annual meeting in Denver early this month.

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Appointment of **Dr. Alexander R. Margulis** as professor of radiology and chairman of that department in the University of California School of Medicine, effective April 1, was announced recently by U. C. President Clark Kerr and Provost J. B. deC. M. Saunders of the San Francisco Medical Center.

Dr. Margulis, 41, previously was professor of radiology at the Washington University School of Medicine and its Edward Mallinkrodt Institute of Radiology in St. Louis. As department chairman, Dr. Margulis succeeds Dr. Robert S. Stone, who became emeritus professor last year but continues to direct research and treatment with the 70-million-volt synchrotron at the Medical Center's Radiological Laboratory. Dr. Howard M. Steinbach has been acting chairman for several months.

GENERAL

Dr. Daniel Blain, State Director of Mental Hygiene, resigned that position April 1. Governor Edmund Brown, in announcing that Dr. Blain had resigned "for personal reasons," said that in the last four years, Dr. Blain "has towered above all others in our state in the degree of his accomplishments in mental health."

Dr. Blain is currently president-elect of the American Psychiatric Association. Before joining the California department, he was for ten years medical director of the A.P.A.

* * *

The Eighth International Congress on Diseases of the Chest, sponsored by the Council on International Affairs of the American College of Chest Physicians, will be held in **Mexico City,** October 11 through 15, 1964.

The congress will be presented with the cooperation of the Mexican Chapter of the College and under the patronage of the Government of Mexico.

Additional information may be obtained by writing to Mr. Murray Kornfeld, executive director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

* * *

California Physicians may soon expect **an increase in inquiries from patients** with complaint of chronic cough and shortness of breath.

Beginning May 1 an intensive educational campaign launched at a national level utilizing mass media—educational literature, newspapers, magazines, radio, television, speakers, etc.—will ask such questions as: "Cough too much?" or "Short of breath?" and advise, "You may have a respiratory disease, don't take chances, see your doctor."

Acting in concert with the National Tuberculosis Association, The Tuberculosis and Health Association of California will alert the public, older people particularly, to the possible significance of the two symptoms with respect to respiratory disease.

THE PHYSICIAN'S *Bookshelf*

MECHANISM OF CELL AND TISSUE DAMAGE PRODUCED BY IMMUNE REACTIONS—2nd International Symposium on Immunopathology, Brook Lodge (Michigan, U.S.A.), 1961—Edited by Pierre Grabar, Paris, and Peter Miescher, New York. Benno Schwabe & Co., Publishers, Basel/Stuttgart; in U.S.A. and Canada: Grune & Stratton, Inc., Publishers, New York/London, 1962. 414 pages, $19.00.

Work in the field of immunology is accelerating at a phenomenal rate so that nowadays nearly every periodical devoted to experimentation in biology and medicine contains at least one article per issue on some phase of an immune response. Likewise, the number of monographs, especially reports of Conferences or Symposia, placing the same lists of participants in their familiar roles, now numbers upward of five per year. The present volume consists of one of these in which some of the consequences of immune interactions (i.e., immunopathology) are analyzed in detail from many sides.

Specifically the International Committee of Immunopathology directed this Second Symposium toward an inquiry into the mechanisms whereby body cells and tissues are injured either by antibody-mediated or delayed allergic reactions. The nine major subtopics contain a total of 29 chapters which in nearly every instance are written by major contributors to the literature in their particular areas of investigation. The subtopics include complexities such as the roles which complement, histamine and histamine-like substances play in antibody-mediated tissue damage; the effects of antigen-antibody complexes and delayed hypersensitivity; and a consideration of tissue injury in the various experimental autoimmune diseases and during homograph rejection.

Few if any completely settled conclusions are drawn by the participants; rather the complexities of the immune responses of the mammalian organism are beginning to be realized. For instance, although several acceptable animal models for autoimmune disease such as experimental thyroiditis and encephalomyelitis now exist, the antigens or agents responsible for them are not known. It is revealing also to observe, and a credit to the Editors who have recorded during the Discussions, that most of the opinions stated by the participants are promptly challenged or expanded upon by equally prominent experts in the audience.

This book is not for the generalist, or even for the average internist. Its content is highly specialized in the realm of immunology, cytology and pathology and contains almost nothing which is at present of practical value in the field of medical practice. However, a rather large subtopic on the role of immune mechanisms as possible pathogenic factors in human diseases such as ulcerative colitis, chronic hepatitis, systemic lupus, rheumatoid arthritis, agammaglobulinemia, Hodgkin's disease and sarcoidosis is very interesting since this type of investigation seems to be pointing the way in the proper direction in nearly every case toward understanding these diseases. The final chapter, the chemical suppression of immunity in experimental and human disease using antimetabolites, alkylating agents, etc., is highly interesting and this approach may pay practical dividends first.

The book is well organized and conceived. It is printed on good quality paper. A novel idea is the synthesis of audience participation of each subtopic by a subeditor into a logical and free-flowing Discussion which greatly enhances the readability of the text. The few minor errors which this reviewer spotted, and which for some reason often appeared in the Discussion sections, do not detract at all from the subject matter. This monograph is more up-to-date than the average one, considering the inevitable time lag for publication in a rapidly expanding field. It should be read in detail and referred to by all who are working in immunology, and these are many these days. Thoughtful pathologists and internists may likewise be intrigued by the implications that they can spot in its pages for the eventual understanding of many human diseases.

Carl M. Pearson, M.D.

* * *

CIBA FOUNDATION SYMPOSIUM ON THE EXOCRINE PANCREAS—Normal and Abnormal Functions—A. V. S. de Reuck, M. Sc., D.I.C., A.R.C.S., and Margaret P. Cameron, M.A., editors for the Ciba Foundation. Little, Brown and Company, 34 Beacon Street, Boston, Mass. (No publication date given.) 390 pages, $11.50.

Assessments of advances and of problems to be resolved in a field are of value from time to time—a premise that the Ciba Foundation adopts and acts on by bringing together first-rate people for discussion. In this volume pancreatic exocrine function is examined at the molecular through the clinical levels.

Enzyme precursor synthesis by ribonucleoprotein particles associated with the endoplasmic reticulum at the base of the acinar cell; transport of enzymes into cytoplasmic canals; enzyme storage in zymogen vacuoles and its discharge through the cell membrane is a beautiful, if not yet complete, tale as told by Palade. Evidence is given by the Hokins for phospholipid participation in the transport of newly formed enzyme across the cytomembranes.

The pancreas is a unique organ in several respects: it is both an endocrine and exocrine gland, it secretes a high concentration of bicarbonate, and it compares with the lactating breast in secreting on demand a large quantity of protein. Reported here are studies and theories of the formation of some of the nine or more enzymes put out by the pancreas, and of the secretion of water and ions. The leaders in the characterization and purification of secretin (Jorpes and Mutt), and of pancreozymin (A. A. Harper) indicate the difficulties in isolation, standardization and clinical application of these gastrointestinal hormones. Grossman's belief is presented that regulation of pancreatic secretion is a combined process involving nervous as well as hormonal factors; although, as he admits, the evidence for this is more conclusive for the stomach than it is for the pancreas.

For the clinician the pancreas is almost as inaccessible to study as ever. Serum enzyme determinations are of some value in some conditions, but there are still uncertainties about what is being measured. The enormous experience of Dreiling and Janowitz and others with the secretin and pancreozymin stimulation tests can be distilled into a statement that the maximal HCO_3^- concentration in the intestinal contents after secretin injection is a sensitive method of diagnosing pancreatic insufficiency.

Gross elaborates on the form of pancreatitis distinguished by hereditability and by aminoaciduria (particularly of lysine and cystine). The means of obtaining sweat for electrolyte analysis in patients suspected of having cystic fibrosis are evaluated by Vink, with iontophoresis showing a clear edge in reliability and safety.

Finally, the question of pancreatic biopsy is discussed with timidity—there are good reasons to be timid, especially about percutaneous biopsy. But Sheila Sherlock, who chaired the Symposium, is more hopeful that in the future pancreatic tissue as well as liver, kidney, myocardial and brain tissues will be available to improve our diagnosis of conditions affecting this interesting organ wrapped around the backbone.

Raymond M. Kivel, M.D.

* * *

CORRELATIVE NEUROANATOMY AND FUNCTIONAL NEUROLOGY—Eleventh Edition—Joseph G. Chusid, M.D., Associate Director, Neurological Division, St. Vincent's Hospital, New York; Clinical Associate Professor of Medicine (Neurology), Seton Hall College of Medicine and Dentistry, Jersey City, New Jersey; and Joseph J. McDonald, M.D., Dean of the School of Medicine, American University of Beirut, Beirut, Lebanon; formerly Professor of Surgery, Columbia University, New York. Lange Medical Publications, Los Altos, Calif., 1962. 384 pages, $5.50 (paperbound).

This book was intended for the beginner in neurology as a supplement to other study material. I believe it accomplishes this purpose. It includes a discussion of all the well-recognized neurological categories, which is not exhaustive but adequate for an introduction, of both central and peripheral nervous systems. The diagrams are good.

There are no references. The inclusion of some pertinent references would have increased the value of this text.

Its discussions of the uncommon disorders is limited and it is here that references would have been particularly useful.

This text has its greatest value for students and post-graduates, who are refreshing their neurological knowledge.

Donald Macrae, M.D.

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ADVANCES IN RHEUMATIC FEVER—1940-1961—May G. Wilson, M.D., Professor of Clinical Pediatrics, Emeritus, Cornell University Medical College; Consulting Pediatrician and Director, Rheumatic Fever Research, The New York Hospital, New York City. A Commonwealth Fund Book, Published by Hoeber Medical Division, Harper & Row, Publishers, 49 East 33rd Street, New York 16, N. Y., 1962. 249 pages, $10.00.

In this monograph, Dr. May Wilson, a long-time student of rheumatic fever, presents a progress report on recent advances in this field. The four principal sections include epidemiology, nature, diagnosis and treatment of rheumatic fever. The author states in the preface that the current volume supplements but does not replace her previous monograph on the subject (1916-1940) and the current controversial aspects of rheumatic fever are discussed objectively. In spite of this premise, the author presents a highly personal account of the subject which differs in many respects from some widely held views. For example, she emphasizes that the current downward trend in the morbidity and severity of rheumatic fever was noted before the antibiotic era. The relationship of rheumatic fever to streptococcal infection is considered rather loose and unproven; consequently, the prophylactic program for the prevention of streptococcal infection is not definitely endorsed. In discussing the nature of rheumatic fever Dr. Wilson rejects the inclusion of this entity within the group of "connective tissue—collagen disease." Specific changes in the myocardium are given great prominence, minimizing the mechanical effects of valvular involvement upon the circulation. In the discussion of diagnostic aspects of rheumatic heart disease physical diagnosis is treated quite superficially with emphasis upon fluoroscopic examination and the electrocardiogram. Physiological aspects of valvular heart disease are completely omitted. The discussion of treatment includes the endorsement of short-term corticoid therapy (7-day), which has been used extensively by the author.

The book is well written; paper, printing and illustrations are excellent. An extensive bibliography is appended to each chapter but its selection appears to be based primarily on documentation of statements made in the text; consequently, many important references are missing.

The monograph cannot be unequivocally recommended as one presenting the current status of rheumatic fever. However, all those who are interested in the field and are thoroughly familiar with it will find it interesting reading as a summary of the views of one of the leading experts in rheumatic fever.

Arthur Selzer, M.D.

* * *

BODY FLUID DISTURBANCES—Edited by W. D. Snively, Jr., M.D., with seven contributors: M. J. Sweeney, M.D.; William H. Hall, Lt. Col., MC; Joseph M. LoPresti, M.D.; George Kulick, M.D.; Morton D. Pareira, M.D.; George F. Schmitt, M.D.; and Curtis P. Artz, M.D. From a symposium on Fluid Balance, American Medical Association, 1961. Grune & Stratton, Inc., 381 Park Avenue South, New York 16, N. Y., 1962. 122 pages, $4.75.

This is a collection of didactic presentations evidently designed for practicing physicians in general rather than for specialists in the field of fluid and electrolyte metabolism. Each topic is therefore treated in a manner which resembles what the medical student likes to call the "cold dope." The result is a series of concise, practical recommendations for diagnosis and treatment which represents a distillation of currently accepted ideas but with little effort to introduce or to discuss the related theoretical or experimental considerations. The symposium commences with a lucid and simplified discussion of the fundamental concepts which are requisite to an understanding of abnormalities in fluid and electrolyte metabolism. There follow lectures on the management of the oliguric patient, fluid therapy in pediatrics and disturbances of fluid balance in diabetes and in burns. The special features of problems in management of fluid balance in surgical patients are considered together with suggestions for more precise administration of fluids given parenterally. A useful and informative discussion of nutritional problems in surgical patients is also presented. This subject, particularly as it pertains to the usefulness of intravenously administered amino acids and lipid, is one which is not as well understood by many physicians or surgeons as that of the uses of fluid and electrolyte. The facts presented on this subject are appropriately conservative and authoritative.

The book should be of service to one who considers his knowledge of the subjects treated as in need of reinforcement at a practical level. It cannot be expected, however, to become required reading for those already well versed in the field.

Harold A. Harper, Ph.D.

ELECTROCARDIOGRAPHY—Fundamentals and Clinical Application—Third Edition, Illustrated—Louis Wolff, M.D., Visiting Physician, Consultant in Cardiology and Head of the Cardiographic Laboratories, Beth Israel Hospital; Clinical Professor of Medicine, Harvard Medical School. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1962. 351 pages, $8.50.

Since the first edition was published in 1950, Wolff's Electrocardiography has been a clearly written textbook embodying the fundamentals with their clinical application. The purpose of the original text is continued in this Third Edition, and a new approach is made whereby vectorcardiography provides a superior facility to the understanding of electrocardiography.

The diagnostic criteria established by the vectorcardiogram are beautifully correlated with the known patterns of electrocardiography in such a manner that a clear concept of vectors is readily applicable to electrocardiographic interpretation.

Addition of chapters dealing with the abnormal cardiac mechanisms, complex arrhythmias and digitalis intoxication are so superbly written that these most difficult subjects are readily understood. The diagnostic criteria of right and left ventricular hypertrophy and of bundle branch block, associated with myocardial infarction are helpfully written.

A student, young or old, will find this text a sound and comprehensive aid in diagnostic electrocardiography and a helpful guide to accurate clinical application.

George C. Griffith, M.D.

* * *

PRIMER OF CLINICAL MEASUREMENT OF BLOOD PRESSURE—George E. Burch, M.D., Henderson Professor of Medicine, Tulane University School of Medicine, New Orleans, La.; Physician-in-Chief in Medicine, Tulane Unit of the Charity Hospital of New Orleans, New Orleans, La.; and Nicholas P. DePasquale, M.D., Instructor in Medicine, Tulane University School of Medicine, New Orleans, La.; Visiting Physician, Tulane Unit of the Charity Hospital, New Orleans, La. The C. V. Mosby Company, St. Louis, Mo., 1962. 141 pages, $5.50.

This most recent addition to the series of "primers" by Dr. Burch and his associates consists of seven chapters. The presentation includes detailed discussions of the historical background of blood pressure measurements, physiological background, clinical measurements, sources of error, normal values and variation with age and other factors, and the diagnostic application of blood pressure measurements. Both the theoretical background and practical information are lucidly presented and easy to read, and well illustrated by charts and drawings. It is indeed refreshing in the present day era of sophisticated and complex laboratory apparatus to find a book devoted to re-emphasis of a simple clinical measurement. This book is recommended to all clinicians and is well worth reading, for physicians tend to forget the important information that can be obtained by blood pressure measurement and only too often delegate it to auxiliary personnel.

Arthur Selzer, M.D.

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SYNOPSIS OF NEUROLOGY—Francis M. Forster, B.S., M.D., Professor and Chairman, Department of Neurology, University of Wisconsin School of Medicine, Madison, Wis. The C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, Mo., 1962. 223 pages, $6.75.

This small handbook was written for both medical student and the physician who is practicing in a field unrelated to neurology. It is a difficult task to write for such an unrelated audience and this book does not succeed entirely in its attempt.

It does list the most frequently occurring disorders under well-recognized categories with a brief description, which in most cases amounts to little more than a simple clinical definition.

It does present the neurological examination in outline form, but the meanings of disorders of normal function are only sketchily explored.

The list of references, although up-to-date, is inadequate. The value of the book would be increased by expanding those references to the more common diseases and including at least one reference to the more uncommon ones.

The book, to be of value to the non-neurological practitioner, should have paid more attention to the neurological manifestations of medical diseases.

This synopsis would be of some value to those practitioners who see little neurology and who are not familiar with neurological entities, but who may, on rare occasions, wish to refresh their memory, but do not need more than an outline.

Donald Macrae, M.D.

* * *

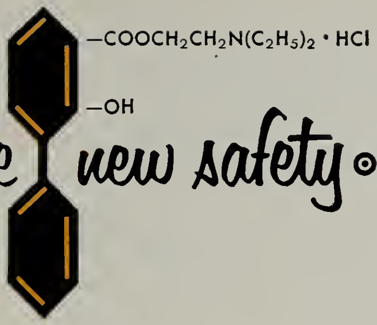
MALPRACTICE LAW DISSECTED FOR QUICK GRASPING—Charles L. Cusumano, Member of New York Bar. Medicine-Law Press, Inc., 42 Broadway, New York 4, N. Y., 1962. 132 pages, $10.

Mr. Cusumano's book is fresh and welcome in an outstanding way. It fills the need for a concise but comprehensive discussion of the law of malpractice. It is written so that a physician could read it through without any inclination to stop and put it aside. Once read, I suspect it will be retained in a convenient place for ready reference.

The value of this small volume has been greatly enhanced by the very excellent detailed table of contents and index. The publishers have done an excellent and attractive printing job.

Both the student physician and the experienced practitioner will find particularly interesting and helpful the chapters that deal with the elements of a malpractice case and those which describe the contract between the physician and the patient which the law implies. The author's discussion of the duties arising out of this relationship, is very well done. The safeguards which the law has provided for physicians are developed in a clear and interesting way. This book should prove interesting to many members of the profession.

William M. Whelan, LL.B.



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157WS

Surgical Progress Reported In Arterial Disease

As a result of surgical advances during the past 10 years, it is now possible in many patients to restore circulation to the lower leg and foot affected by hardening of the arteries.

Treatment of obliterative atherosclerotic disease of the arteries supplying the lower limbs is much more effective today than it was 10 years ago, Dr. Robert R. Linton, Boston, said in the January 19 *Journal of the American Medical Association.*

"It is almost miraculous to see how well the reconstructive arterial operations that are being performed today on these patients restores the arterial circulation to the lower limb, with relief of symptoms and the salvage of many extremities," he said.

The disease is probably one of the most common circulatory diseases afflicting man, Dr. Linton said. It is increasing in incidence, he said, because the victims primarily are older persons and more persons are living longer.

Although surgery is the best treatment for most persons with this disease, he said, operations cannot be performed in all cases. Surgery is frequently impossible for persons with diabetes and for a number of others because of advanced age and the severity of the disease, he said.

However, he said, it is not unlikely that ways of preventing the disease will be so improved in the future that many of the current surgical procedures can be avoided.

Dr. Linton is affiliated with the department of surgery, Massachusetts General Hospital.

Routine Pap Smears Urged In Emergency Rooms

Routine Pap smear tests were recommended for women admitted to the obstetrics and gynecology sections of hospital emergency rooms as an effective means of discovering unsuspected cancer of the cervix.

A screening program at Jackson Memorial Hospital in Miami revealed serious cervical disease in a large number of women, Drs. James Henry Ferguson and Sergio Leon reported in the February 23 *Journal of the American Medical Association.*

Of 3,697 cervical smear examinations performed during a two and one-half year period, 261 produced evidence of cancer, they said. In 43 per cent of these 261 patients, there were no visible signs of cancer and the disease might not have been detected without the Pap test, they said.

The physicians termed the emergency room service "a valuable cancer-detection effort" and suggested that other hospitals and cancer screening programs "explore this avenue."

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REFERENCES AND REVIEWS

Pathology of Identity as Related to the Borderline Ego—A. Suslick, Arch. Gen. Psychiat., 8:252 (March) 1963.

In recent years numerous writers have proposed, from different viewpoints, the concept that a personal identity is established early in the development of the individual. This identity serves as a lifetime directional or referential structure, and affects behavior and performance. In this paper, detailed clinical excerpts have been described from a number of different cases which lend support to these propositions, and which describe the consequences of an early-established pathological identity theme.

* * *

Quantitative Microdetermination of Enzymes in Sweat Gland—G. E. Gibbs, et al., Amer. J. Dis. Child., 105: 249 (March) 1963.

Alkaline phosphatase, acid phosphatase, adenosine triphosphatase, cholinesterase, and pseudo-cholinesterase activities were assayed in isolated fragments of frozen dried sweat gland. Determinable quantities of these enzymes were found. No abnormality was evident in cystic fibrosis.

* * *

A Coordinated Consultant Team for Remote State Hospitals—P. F. D. Seitz, et al., Arch. Gen. Psychiat., 8:283 (March) 1963.

This report presents a method for improving the existing resources of manpower in professionally isolated state hospitals. Colleagues from a metropolitan psychiatric center (the Chicago Institute for Psychoanalysis) have banded together to form a coordinated team of consultants who commute regularly, in rotation, to a state hospital located 175 miles from Chicago. The consultant team and its home institution assume far-reaching responsibilities for the clinical, training and research activities of their "adopted" hospital. The initial results of the project are promising and suggest that commuting consultant teams from metropolitan psychiatric centers may be a practical and effective method for raising professional standards and improving patient care in remote state hospitals generally. The present approach may provide one of the many needed answers to the staggering human problems of remote state hospitals everywhere.

* * *

Hospital Cross-Infection and Dirty Walls—W. Wypkema and V. G. Alder. Lancet, 2:1066 (Nov. 24) 1962.

Bacterial contamination of walls, floors, and table tops, etc., was assessed by a standard swabbing technique. Vertical surfaces such as walls, were much less heavily contaminated by bacteria than floors, table tops, and other horizontal surfaces. Dirty walls, though undesirable for other reasons, are unlikely to promote cross-infection.

* * *

Small-Intestinal Absorption Before and After Vagotomy in Man—A. G. Cox, Lancet, 2:1075 (Nov. 24) 1962.

Absorption of glucose, D-xylose and NaI^{131} fed directly into the duodenum was measured before, 18 hours after, and 1 week after vagotomy with pyloroplasty for chronic duodenal ulcer. Eighteen hours after vagotomy there is a slight delay in absorption, but insufficient to interfere with duodenal feeding as a substitute for intravenous feeding at

(Continued on Page 64)

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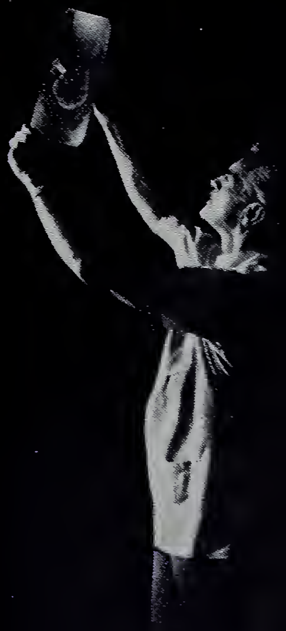

REFERENCES AND REVIEWS

(Continued from Page 56)

this stage. One week after vagotomy, absorption has returned to normal, indicating only a temporary effect of vagotomy on absorption of carbohydrates and electrolytes.

* * *

Photodynamic Action: II. Effects of Photodynamic Action on Certain Properties of Human Serum—R. P. Bolande, L. Wurz and E. E. Ecker. Arch. Path., 75:123 (Feb.) 1963.

Photodynamic action on serum causes a loss of albumin associated with an increase of total globulin. The separate globulin peaks become indistinguishable except for gamma, which is reflected by persistence of blood agglutinins. Serum may be decomplemented by photodynamic action using eosin, toluidine blue, or hematoporphyrin as photosensitizers. All 4 components of the complement are suppressed to about the same extent. Decomplementation of serum through photodynamic action was associated with destruction of the natural cytotoxicity of serum.

* * *

Occult Manifestations of Cancer—R. D. Henderson, Canad. Med. Ass. J., 88:31 (Jan. 5) 1963.

A summary with classification of the clinical syndromes occasionally associated with, or heralding, cancer has been prepared. Some tumors present with an endocrine or endocrine-like action; included in this group are thymomas, non-beta cell tumors of the pancreas, and carcinoids. Cushing's syndrome, hypoglycemia, hypercalcemia, polycythemia, and gynecomastia have been produced by a wide variety of tumors. Tumor emboli, nonbacterial thromboendocarditis, and thrombophlebitis occur occasionally, but thrombophlebitis is not so frequent as was previously considered. Neurological syndromes are rare and show a great variety of presentations. Other occult manifestations of cancer include hypertrophic pulmonary osteoarthropathy, various skin diseases, obscure pyrexias, and pain in Hodgkin's disease secondary to alcohol consumption.

* * *

Relapse During Treatment of Pernicious Anemia with Refined Liver Extract—D. A. L. Watt, Lancet, 2:1146 (Dec. 1) 1962.

Three cases of typical pernicious anemia have been studied following relapse which occurred when treatment with the refined liver extract had continued for many years. The hazard of producing a false sense of security in physician and patient by using this preparation has been emphasized. A plea is made for its replacement in all cases with purified vitamin B_{12}.

* * *

Childhood Asthma and Steroid Therapy as Influences on Growth—C. J. Falliers, et al., Amer. J. Dis. Child., 105:127 (Feb.) 1963.

Anthropometric data on 103 children with asthma seen in office practice and 302 children observed at the Children's Asthma Research Institute in Denver, Colorado revealed a significant growth retardation, related to the severity of asthma and also to the prolonged continuous use of anti-inflammatory steroids. Discrimination between the two factors (illness and steroids) was often impossible. Comparison of the effects of cortisone (13 cases), prednisone (36 cases), and betamethasone (12 cases) indicated that most children on a mean daily dose of prednisone exceeding 6 mg./sq. meter of body surface per day grew at suboptimal rates. On the contrary, children on 50 to 70 mg. of cortisone daily generally grew satisfactorily. Beta-

(Continued on Page 70)

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REFERENCES AND REVIEWS

(Continued from Page 64)

methasone in very small amounts, averaging 0.49 mg./sq. m./day was found to control asthma adequately. Growth inhibition was noted when the daily dose of betamethasone exceeded 1 tablet of 0.6 mg., while smaller doses had varying effects in different individuals.

* * *

Endocrine Influences on Fat and Carbohydrate Metabolism in Man: II. Effect of Sulfonylurea Derivatives on Abnormalities of Serum Nonesterified Fatty Acid and Blood Glucose Concentration in Diabetes Mellitus—A. G. Hills, B. H. Marks, and I. Kiem. Diabetes, 11:61 (supp.) 1962.

Serum nonesterified fatty acid (NEFA) declines promptly in stable diabetics when glucose is ingested. The decline is prompt, prolonged, and, on a percentile basis, greater than in normal subjects. It is believed to reflect increased utilization of glucose by adipose tissue and by the organism as a whole. Treatment with sulfonylurea compounds results in modest amelioration of the elevated fasting blood sugar and serum NEFA and abnormal glucose tolerance of such patients, and nearly normalizes values for serum NEFA concentration one to four hours after ingestion of glucose. The observed effects of the drug regimens are considered to result from improvement by the drugs of the rate of secretion of insulin. Concentration of serum NEFA appears to furnish, under the conditions of the experiments, a direct reflection of the rate of mobilization of body fat stores, and to vary inversely with the general rate of utilization of carbohydrate.

* * *

Kinetics of Alkali-Denaturation of Hemoglobin in Single Erythrocytes—G. Matioli and B. Thorell, Blood, 21:1 (Jan.) 1963.

Microspectrophotometry has been used to record the kinetics of alkali-denaturation of the hemoglobin in single erythrocytes.

* * *

Elastosis Perforans Serpiginosa—M. Greenblatt. Arch. Path., 75:177 (Feb.) 1963.

The histopathologic features of elastosis perforans serpiginosa, a rare skin disorder, are discussed and illustrated. The pertinent literature is reviewed and 2 additional cases are reported. Observations favor the concept that elastosis perforans serpiginosa should be grouped with those pathogenic entities in which autoimmune phenomena may play a primary or important secondary role.

* * *

Improved Gastroscopic Diagnosis by the Use of Multiple Positions—L. H. Berry, D. Feldman and R. Schoop. Gastroenterology, 44:20 (Jan.) 1963.

This is a review of 2,843 consecutive gastroscopies in which patients were rotated from the left side to dorsal and to right side, while being examined. One of the authors participated in all of the examinations. In 854 of the cases, comparative visibility of lesions and anatomical sites were recorded in each original report. The conclusion is that the routine use of multiple positions in gastroscopy definitely improves the diagnostic accuracy. Illustrative cases, statistics, and descriptions of techniques are given.

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8. Psoriasis	147 (95%)	8	155
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*SAMITZ, M. H.: CLINICAL EVALUATION OF TOPICAL FLUOCINOLONE ACETONIDE CREAM, *CURRENT THERAPEUTIC RESEARCH 4*: 589 (1962).

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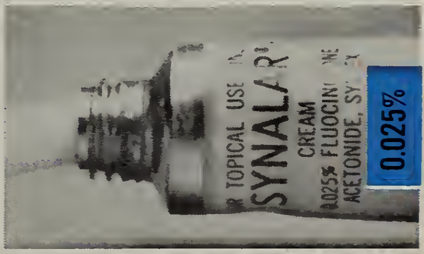

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Heredity and Pregnancy Are Factors in Varicose Veins

Heredity and pregnancy have a definite influence on the development of varicose veins, according to Dr. Noah D. Fabricant, Chicago.

Writing in the April *Today's Health* magazine, published by the American Medical Association, Dr. Fabricant said varicose veins affect one of every two women and one of every four men over 40.

"Varicose veins are widespread in women who have borne children," he said. "One explanation seems to be that a hereditary factor is conspicuous in the maternity ranks as well as in members of the same family in succeeding generations."

Persons with a "pronounced hereditary disposition" will develop varicose veins despite efforts to avoid them, he said.

Varicose veins in the legs are incompetent blood vessels that lie just beneath the skin, Dr. Fabricant said. Having lost their elasticity, he said, they no longer function normally and become enlarged, swollen, and tortuous.

The function of the leg veins is to return blood to the heart, he said, and this is accomplished by contraction of the leg muscles and a system of valves in the veins which prevents blood from falling back toward the feet.

The valves hold the key to the rise and fall of varicosities, he said. When the valves are damaged due to prolonged pressure or other factors, they lose their elasticity and function poorly, he said.

Pregnancy produces sufficient pressure on the veins that drain legs and thighs to sometimes produce valvular damage and varicose veins.

As a preventive measure, Dr. Fabricant said, long hours of standing should be avoided. Constricting girdles, garters, elastic waistbands and other apparel that might constrict veins and interfere with normal circulation also should be avoided, he said.

Another preventive measure is to get up and walk about as frequently as possible during long automobile, airplane, or train trips, he said. When seated, venous pressure in the legs can be reduced by elevating them, he said.

Mothers-to-be should spend a regular amount of time in a reclining position, he said.

If varicose veins become troublesome, Dr. Fabricant said, there are two types of treatment, injections and surgery.

Injections of a solution to cause clotting forces the blood to travel an alternate route, he said. As a rule, he said, injections can be given in a physician's office with safety and little pain.

If the disorder is pronounced, he said, surgical correction becomes necessary. The surgical procedures commonly used are tying off the veins or removing them, he said. Although neither method is infallible, he said, most of the unsightly large veins disappear after surgery.

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Earlier Diagnosis Possible in Childhood Tumor

Neuroblastoma, one of the most common malignant tumors of childhood, can now be recognized and treated at an earlier stage because of a new diagnostic procedure, it was reported in the March 9 *Journal of the American Medical Association.*

The discovery that the tumor in most patients causes an excess production of the chemical compound known as dopa makes it possible to detect these cases through urinalysis, Drs. Clyde M. Williams and Melvin Greer, Gainesville, Fla., said.

Previously a conclusive diagnosis depended on a biopsy and by this time the malignancy often has spread to other parts of the body, they said.

The excess dopa is metabolized by the body primarily by two chemical processes, the physicians explained. The end products of these processes are homovanillic acid (HVA) and vanilmandelic acid (VMA) which are then excreted, they said.

Summarizing available case reports, they said, an elevated VMA excretion has been found in 58 of 75 patients, or 77 per cent, and an elevated HVA excretion has been found in 32 of 43 cases, or 75 per cent. Furthermore, they said, in 42 cases in which both HVA and VMA measurements were taken, 40 patients, or 95 per cent, have had one or both of these acids elevated.

"Simultaneous measurements of HVA and VMA levels . . . provides an effective method for the diagnosis of a majority of these tumors and for following the results of treatment," they concluded.

An accompanying editorial said, "The importance of this diagnostic advance is best appreciated when it is recalled that neuroblastoma ranks just below leukemia in incidence as the most common malignancy of infants and children."

A neuroblastoma grows rapidly and forms a bulky mass in the abdomen. It spreads to other parts of the body early in its development and the outlook for recovery is poor although surgical removal and x-ray therapy may provide some cures.

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The Therapeutic Community in a County General Hospital

HARVEY J. NEWTON, *M.D.*, Palo Alto

• The past decade has witnessed an enlightened revision in the treatment of the mentally ill. The new approach purports that the hospitalized patient is more effectively treated in open units attached to general hospitals in the local community. Social interaction based on mutual trust and respect for the individual is facilitated in an atmosphere of enhanced communication potential. The improvement of patients in all diagnostic categories seems to justify the enthusiasm for advocating the therapeutic community philosophy in units of a general hospital.

THE THEORY of hospital treatment of the mentally ill is in the exciting throes of change and re-evaluation. The pendulum is swinging away from large authoritarian locked institutions to smaller unlocked more permissive units in general hospitals. Here, the mentally ill retain the rights and dignity of the physically ill and the stigma is diminished. This paper will attempt to describe the application of the therapeutic community concept to a psychiatric receiving unit in a county general hospital, and describe the therapeutic impact in such a setting.

Evolution and Philosophy

The concept of the therapeutic community was formally elaborated by Jones[1] after World War II following his experiences in affecting social attitudes of patients with largely desocialized character problems. The elements of his method derived from the heightened interest in socio-psychological process as an important agent in the treatment setting. His patients participated in a permissive group living experience which emphasized the social factors in aspects of their illness. Self control, trust and unrestricted communication replaced rigid authoritarian controls. In 1955, Wilmer applied the principles of a therapeutic community to the receiving unit of the U. S. Naval Hospital at Oakland, California, and enhanced the understanding of patient treatment in such a setting. Later in reporting on this work he said: "This type of management opens up the possibility of therapy through social interaction with patient-staff involvement affording potentialities for social development and identification with the group."[7]

A precise definition of a therapeutic community is a difficult task, for such a concept may imply many things. Each unit of this type tends to develop its own personality, depending on the particular needs that it is designed to meet. The essence of the patient experience may be viewed as "reeducation for life."[4] The social and interpersonal difficulties of daily group living comprise a milieu which is conceived in terms of its "resemblance to life for real."[4] Herein lies the potential for group morale and increased social awareness. To achieve this there must be "unrestricted communication between patients and staff with maximum utilization of the healthy part of the personality."[10] The traditional institutional hierarchy is modified by diminishing

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From the Department of Psychiatry, Stanford Medical Center, Palo Alto.

Submitted July 2, 1962.

social distance between staff and patients while promoting "equal status participation" as members of the community. The atmosphere is not unlike the esprit de corps of a town hall meeting where everyone feels he belongs and may speak his mind. A community living group favors patient identification with a meaningful social unit and the gradual incorporation of its value system. Patients may then begin to employ the norms of this new reference group in more objectively viewing the self in terms of the reactions aroused in others; and this can lead to an enhanced social consciousness.

The Ward and Personnel

This communication is based on the author's observations in a year of association with a 30-bed therapeutic community in the county hospital in San Mateo, California. The hospital is the acute treatment center serving a population of 450,000. The open door unit, begun in December, 1956, was based on the theory that the mentally ill could best be treated as near to their homes as possible.* Over 120 patients are admitted to the ward each month for evaluation or treatment. The average term of confinement is seven to ten days, although patients may stay up to 90 days. Admission screening includes pre-admission home visits for evaluation before commitment hearings and 24-hour psychiatric coverage in the emergency room. As the ward is the receiving unit for any acute psychiatric emergency in the county, little screening other than in the above cases, is possible. The staff is composed of six therapists (three staff psychiatrists, two residents and an intern), twenty nursing personnel (seven registered nurses, nine licensed vocational nurses and four male attendants) divided over three eight-hour shifts, three social workers, one occupational therapist and two office secretaries.

The ward atmosphere tends to be friendly, permissive and informal. Members of the staff do not wear uniforms or any other differentiating symbol of authority. Patients are permitted to keep all personal belongings with the exception of liquor, razor blades, personal medication and money over the amount of five dollars. The general expectation is that of success. Staff members enthusiastically believe in what they are doing and that the approach is effective.

Symbolism of the Open Door

The open door is first a symbol of trust in patients as responsible persons. It carries the implication of freedom of choice combined with the expectation of self-restraint. In addition it minimizes the isolation of patients from their families and the community from its responsibilities; for example, relatives and friends of patients may visit any time between the hours of 10 a.m. and 9 p.m. Locked doors, by shutting patients in, and society out, imply that there is something to be feared. The open door therapeutic community confronts society with its problem and attempts to deal with its guilt. "The mentally ill deserve to be heard and sometimes the community has to listen whether it prefers to or not."[10]

Concept of the Program

A. The Admission Procedure

Admission is a crucial period for both the patient and his family. Following an evaluation in the emergency room, both the patient and his family are escorted to the ward by the physician and introduced to the admitting nurse, who greets the patient in a friendly manner. Following this, the patient is introduced to patients who have been specially designated to welcome newcomers, and through them to other members of the group. The orientation procedure initiated by the nurse is an essential first step of acculturation. The admitting nurse has a strategic opportunity to convey the theme of trust, mutual respect and honesty which are the basic ingredeints of the culture. The family is introduced to the social worker, and, if possible, an initial interview is held. Treatment can be greatly facilitated if the apprension of admission of both the patient and his family is dealt with as soon after arrival as possible.

B. The Community Group Meeting

The cornerstone of the program is the community group meeting—the therapeutic leveller and sounding board for thoughts and feelings. The community group is not synonymous with the traditional concept of group therapy. The community meeting, comprised of as many as fifty patients and staff, may include a wide range of subjects such as administrative matters, ward routines, and the vast complex of interpersonal difficulties that arise when a group of individuals live together. ". . . the individual responds according to his own particular pattern; in the discussion he realizes that there are other possible ways of reacting. . . ."[3] The ultimate goal of the meeting is to enhance the capacity of the self to effectively relate to others.

The fuel for discussion is *feed-back.* This means accurate rechanneling of observations pertaining to events on the ward and patients' behavior, "Patients and staff must have access to the total body of relevant knowledge in the life of the institution"[9] in order for the group to realistically confront the individual with his behavior. Often the patient may discover that "the community deals with his problems in a much more tolerant way than does his own conscience."[2] Feed-back is an important function of the nursing staff, who are in a position to observe the tone of the ward over the 24-hour period. The culture is maintained by the staff in conjunction with a patient core group made up of those who are in hospital for a relatively long term (up to 90 days). The latter are selected on the basis of their ability both to enhance the program and to benefit from it. The community meetings that usually are of most therapeutic value are those in which the group identifies, and resolves in agreement, the problems originating in the interpersonal tensions of a group living experience.

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*The unqualified support of Dr. H. D. Chope, M.D., M.P.H., the director of the San Mateo County Department of Public Health and Welfare, was perhaps the most important factor both in inaugurating and maintaining the open door policy in the face of the determined resistance that greeted the new program within the hospital and in the local community.

The physician, in his role as group leader, attempts to elicit the feeling tone of the group, to stimulate and facilitate maximum participation, and to comment upon and relate the observed interaction to relevant events in the social context in a non-threatening yet precise manner. It is essential that he not intrude upon the spontaneity of the discussion. Over-participation or deep analytic interpretations by the physician tend to curtail spontaneous communication by the patients. The therapist should address his remarks to the ego of the group. Meetings may be organized as indicated when acute situations or heightened tension arise on the ward. Such meetings are frequently held in the evening.

The daily group meeting is followed by a half-hour staff discussion. The material of the preceding meeting is processed further and other relevant observations are tied in. The staff meeting ideally is an elastic learning experience, a place for definition, and a time for resolution of staff tensions and dissension. Frequently the patients assemble a spontaneous discussion of their own to further evaluate the content of the preceding meeting.

Patients are divided into three smaller and more closely knit groups of about ten patients and three staff members who meet on three afternoons each week. In this more intimate setting they have a further opportunity to resolve the issues brought forth in the large community group.

C. The Role of the Patient

The implicit expectation is that patients, given the opportunity, can accept the responsibility for their own appropriate behavior. They are expected to do the best they can in the way of active participation in the groups. The responsibility for socially acceptable behavior extends beyond the self to assisting others less able to institute controls from within. There is an abundant therapeutic resource in patient to patient relationships which may be tapped and utilized to enhance the entire program. Patients assume important roles as elected officers in the patient "steering committee" which organizes household routine, door watch, mealtime duties and activity planning.

D. The Place of Individual Therapy

Individual therapy has a distinct and important place in a therapeutic community. Current interpersonal difficulties can be effectively handled in group meetings, but the more deeply rooted personal difficulties are better evaluated and managed individually. The more inhibited members of the group may well discuss privately what they could not bring out in the group. Individual therapy does not seem to appreciably diminish investment in the group; in fact the two are more likely to be complementary. With additional insight achieved through psychotherapy, patients are often better able to make more meaningful contributions in the group sessions. However, there is a danger that some patients will evade the difficulties which arise in their ward relationships by only discussing them in the individual interview. Such evasion should be discouraged and the patient urged to redirect group living problems to the community meeting where they are most effectively handled. Patients receive one and a half to two hours of psychotherapy a week and attempts are made to see each of them for ten minutes on days when they are not scheduled for formal interviews.

E. The Somatic Therapies

Tranquillizing drugs are used as freely as necessary, for this may allow the more disturbed patients to become more amenable to the reality-oriented forces of the group.

The use of sedatives and hypnotics is largely discouraged. Eighteen per cent of the patients received them, mostly for delirium tremens, withdrawal symptoms in drug addicts, and epilepsy. Excessive use of sedatives tends to be an index of anxiety in the staff rather than in the patients. It is likely that the approach to therapy on the unit tends to decrease the need for drugs of this order. Rarely are sedatives and hypnotics used for complaints of insomnia or anxiety; but rather the patients are urged to seek out the sources of their difficulty by talking to the staff rather than diminish the urgency to deal with it by the temporary relief that can be obtained by taking a drug.

Electroconvulsive treatment was used in only six of over 1,650 patients admitted in the year July 1, 1960 to June 30, 1961. Three were manic depressive, two were psychotic depressive and one was schizophrenic. Electroshock, although placing additional demands on nursing time, did not seem to appreciably affect the therapeutic milieu. There can often be resistance to electroconvulsive therapy in a therapeutic community because the staff often views it as a final gesture when the socio-psychological approach has been unsuccessful. There is a basic fallacy in overenthusiasm for one concept impairing objectively for another. The very flexibility so fundamental to the concept of the therapeutic community suggests that it lends itself to the use of any ancillary therapy. It should be reasoned that a therapeutic community diminishes the need but does not do away with electroconvulsive therapy when it is indicated.

The community concept of self control and group reference control coupled with adequate chemotherapy and attentive nursing care has resulted in the fact that seclusion and restraints were rarely necessary on the ward.

F. Visitors to the Unit

An important facet of the program was the increasing frequency of outside visitors to the community meetings. These included, among others, many professional visitors both from this country and abroad, local psychiatrists and other physicians, a superior court judge, members of the grand jury, a sheriff's deputy, writers, and nonpsychiatric personnel in the hospital. Visits such as these tend to facilitate communication and understanding between representatives of the community and the mentally ill as well as diminish the barriers between patients and the outside. The visits of medical personnel often seemed to increase their understanding of psychiatric patients.

G. Discharge and Referral

One of the primary goals of short-term hospitalization is motivation for out-patient follow-up care. Strong group transference leads to the problem of intense separation anxiety for many patients, and this should be dealt with before the patient is discharged. Whenever possible, initial out-patient appointments are made before the patients leave. It is significant that many former patients make lasting friendships on the ward and continue to see each other following discharge. Many of them return to the ward to visit the staff.

H. Working with the Relatives

Pathogenic environmental factors in the patient's illness should be evaluated and altered when this is possible. If the interpersonal influence in mental illness is a valid concept, then relatives must indeed be viewed as participants in the pathological process and included in the treatment regime. Almost all relatives are seen by the social service and it is not uncommon for a family member to be seen in casework simultaneously with the patient's hospital stay. It is vital that they be acquainted with the problem and helped to deal with it realistically. Spouses' group meetings, where common problems are discussed, are held weekly right on the ward. Again, this serves to point out the relatives' involvement and responsibility in the therapy process.

Often, just before the patient is discharged a joint interview is held with the patient, his family and the physician so that residual communication problems can be dealt with openly. The degree of awareness and involvement of relatives closely corresponds to the ultimate prognosis of the patient.

I. Problems in the Program

It is often difficult and sometimes impossible to gear the program to the needs of acutely disturbed, uncontrolled and physically powerful psychotic patients. Staff members frequently find themselves frustrated, for the use of physical restraint is perceived as disruptive for the ward community. As these potentially violent people cannot be dealt with safely in the permissive atmosphere of a ward community, they are probably best handled in a locked facility with adequate numbers of male attendants to cope with them. An estimated six to eight patients each year have had to be transferred to the state hospital because of management problems.

Verbally uncontrolled psychotic patients often present problems in the community group. Their profuse stream of talk shuts out other patients and may destroy the value of the meeting. Not only has it a disruptive effect on the group, but it also isolates the patient even further from others. If sufficient limits cannot be instituted from the group, then these patients are best excluded temporarily, and worked with individually.

Roles must be continually re-defined. Nursing staff members have difficulty overcoming the vestiges of the traditional professional hierarchy. They tend to feel that they will be criticized for their contributions to group meetings. It is important that they become secure in their role in feedback, with freedom to express their thoughts about patient management without feeling totally subservient to the physicians' wishes.

Ideally, the delicate balance between permissiveness and rigid direction is achieved. It is common, however, to be overly permissive, which can lead to insecurity and anxiety in both patients and staff. *Permissive* means that patients may feel free to *say* whatever they please; it does not imply that they are free to *do* whatever they please.

Because the ward facilities are frequently overtaxed by the high admission rate, it has been occasionally necessary to discharge some patients prematurely in response to the pressure for beds.

TABLE 1.—*Data on Nature of Illness, Length of Stay and Results on Sampling of First Admissions of Patients Accepted for Treatment on the Therapeutic Community Unit. Patients Brought in on Detention Papers for Evaluation Only, Pending Commitment Hearing, Not Included.*

Nature of Illness	Number of Patients No.	Number of Patients Per Cent	Length of Stay (Days)	Improvement† Noted in No.	Improvement† Noted in Per Cent
Character and personality disorders	56	26.9	7.9	21	37.2
Acute brain syndrome	66	31.8	4.7	47	71.2
Chronic brain syndrome	11	5.3	6.4	5	45.5
Neurotic disorders	48	23.1	6.6	44	91.7
Psychotic disorders (schizophrenic reaction)	27	12.9	24.4	23	85.4
TOTALS	208	100.0	8.9	140	67.3

*Sample includes one-third of total admissions from June 1960 to June 1961. Data were taken at random from the record file.

†The improvement ratio is based on the subjective judgment of the physician involved, which was generally based on evidence that acute symptoms had subsided and that an improved level of social adaptation had been achieved. In some cases, long-term alteration of the underlying process was achieved. As to the lasting effect of the treatment no adequate follow-up studies have been done. However, 10 per cent of patients had to be readmitted in an average six-month period following discharge.

This frequently leads to a patient's being apprehensive about losing his place.

The lack of an outdoor recreational and grounds area has led some patients to feel confined and bored. The off-the-ward patient activity program—picnics, bowling, movies, sporting events, sightseeing—has partially compensated for the lack of grounds facility.

The intense personal investment of the staff in the concept of the therapeutic community can lead to over-identification and intense involvement with patients at the expense of objectivity. Over-investment in this kind of program may lead to unrealistic demands on the patient's capacity to respond. The ensuing sense of failure may put an additional burden on an already impoverished patient self-esteem. The problem of staff over-investment or of detachment should be quickly identified and resolved as soon as possible. The staff are not immune to criticism from patients or other staff members. Hidden staff tension often remains covert, and as such may manifest itself by an increase in disturbed patient behavior.

The goal of unrestricted communication is not always easy to achieve because of the highly transient population, covert staff dissension, and the necessity of treating all types of patients on the same ward.

RESULTS

Generally the unit has been able to meet the needs of a large number of patients of all diagnostic categories with some degree of improvement in the psychiatric condition. It must be remembered that the goal of a program of this type is social cure, not personality reorganization. The following statistics are not given as absolute evidence of the efficacy of such a program, but are included to suggest the direction that it is taking. In the year under report, 93 per cent of the discharges from the unit were considered indicated; 70 per cent of the patients discharged in these circumstances were recommended for further follow-up care.

Since the inception of the ward over four years ago, more patients are found to be seeking help voluntarily. In the 12 months under review, 68 per cent of patients admitted were referred by self, by relatives or by friends. Only 40 per cent of admissions were voluntary three years ago.

Since the ward opened, the overall rate of commitment of patients from it to state hospitals has dropped from over 30 per cent to 15 per cent.

In general, it appeared that schizophrenic patients and those with acute brain syndrome (alcohol) and character disorders responded best to the program here described. Persons with character disorders were better able to contend with their social world. Alcoholics were discharged in improved physical and emotional state, and many sought follow-up care at the clinic and with Alcoholics Anonymous. Patients making suicide gestures seemed to benefit from brief hospitalization and an interpretation of their action as a cry for help directed at some significant person. A joint interview with the family helped to facilitate transmission of this message. Even the small group of patients (mostly senile) with chronic brain syndromes could be assisted through helping the relatives to deal with the problem in a realistic manner. (See Table 1.)

The acute schizophrenic patients are of special interest in a therapeutic community because they comprise the majority of patients selected for long-term care on the unit and are perhaps a good barometer of the therapeutic potential. Sixty patients of this order were treated from June 1960 to June 1961. They had not been treated on the permissive ward previously but were having anywhere from their first to fifth overtly psychotic episode at the time of admittance. Almost all remained in the hospital on a "voluntary" basis, although many stayed under threat of involuntary commitment.

Ninety per cent of the schizophrenic patients returned home in remission after relatively brief periods—an average of five and a half weeks. The 10 per cent who were committed were usually too disruptive, aggressive and threatening to respond to the controls compatible with a non-authoritarian program. Only 13 per cent of those who were discharged were readmitted within six months, which suggests that the results that were achieved had some lasting effect. Those readmitted seemed to show that premature discharge and failure to follow through with after care were factors. The therapeutic community is effective with schizophrenics largely because it affords them vast opportunities for reestablishment of ego boundaries and social reintegration.

The program on the unit was essentially standard for all admissions. Eighty-five per cent of the patients were given the triad of drug therapy, group therapy and individual therapy.

DISCUSSION

An open door therapeutic community can be effectively applied to a psychiatric receiving unit in a county general hospital and can achieve the goal of returning many patients to the community as soon as possible—a week or ten days. It is obvious that underlying psychopathology cannot be affected in so brief a period, but nevertheless patients can be assisted through an acute emotional crisis and properly prepared for follow-up treatment after discharge. The unit's location right in the community confronts society with its responsibility to the mentally ill and diminishes the unhealthy isolation of treatment in far off impersonal state hospitals. The availability of a local treatment resource results in more people seeking help voluntarily.

Although treating all kinds of patients for brief periods on one ward results in increased pressure on the staff and makes for difficulties in maintaining the therapeutic milieu, effective treatment results can be achieved. The dangers that present themselves in such a unit are over-enthusiasm at the expense of objectivity, intense and often exhausting staff investment, and failure to resolve staff tension.

All the formal modes of therapy are applicable to the therapeutic community. The principles of honesty, trust, and self-respect in an atmosphere of relatively unrestricted communication and social interaction have particular meaning to schizophrenic patients, who seem to respond extremely well.

The material presented in this paper is largely impressionistic and descriptive in nature. It is essential that therapeutic community units in general hospitals be subjected to further systematic study under the rigorous dimensions of scientific methods before the full impact of such a treatment program may be demonstrated.

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The Relation of Potassium to Digitalis Effectiveness and Toxicity

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• The concentration of potassium in the extracellular fluid, and presumably in the cell membrane and intracellular contents of the myocardial fibre, has a significant influence on the contractibility, irritability, conduction and rhythmic tendency of the heart muscle. The therapeutic and toxic dosage of digitalis is clinically affected by the variations in potassium concentrations. The range between therapeutic and toxic dosages of digitalis and sensitivity to bodily potassium depletion varies with the degree of failure of the myocardium and passive congestion of the liver.

As GROUNDWORK for a discussion of the interrelated actions of potassium and digitalis on the heart, a review of the independent effects of each would seem to be in order.

I. Potassium in adequate concentrations, especially within the cell, is necessary for maintenance of osmotic balance across the cell membrane and, thus, cell integrity. (Potassium is the major intracellular cation as sodium is in extracellular fluids.) Elkington, Squires and coworkers,[3,30,31] suggested that loss of intracellular potassium in heart failure induces extracellular hypo-osmolarity, and secondarily a dilutional edema with low extracellular concentration of sodium. (Sodium and proteins have greater influence on intracellular as well as extracellular osmotic pressure than does potassium.)

II. The contractile quality of the myocardial fibres is dependent on the participation of potassium in the oxidative phosphorylation cycle, including production of adenosine triphosphate (ATP), which is the major source of myocardial energy. Factors increasing muscle relaxation[22] are presumed to inhibit ATP-ase (enzyme). Potassium increases this enzyme activity and restores the myofibrils' response to ATP. In high lethal levels of serum potassium—for example, over 9 mEq. per liter in experimental animals, the heart beat ceases in a relaxed phase. Short of these high levels, diastole is prolonged, especially if Ca^{++} concentration is reduced.[23,24,25] Pronounced hypokalemia will result in loss of contractile tone and myocardial failure. Prolonged potassium deprivation in man and animals has caused myocardial and renal degeneration.

III. The effects on rhythm, conduction and the electrocardiogram will be discussed below.

Relation of Potassium Concentrations to the Electrical and Mechanical Characteristics of the Myocardial Cell.

Abnormal concentrations of potassium ions may affect the heart—probably at all three phases of the cell boundary, namely: (1) The extracellular fluid and constituents influencing the intracellular/extracellular potassium gradient; (2) The cell membrane and its complex ion alignments and movements, including the Na^+ and K^+ "pumps" of these ions against gradients, and (3) the intracellular constituents, including water.

From extracellular and intracellular measurements of Na^+ and K^+, variations from the normal appear to be largely intracellular, as in Paragraph I (above), or extracellular, as when the plasma K is lowered concomitantly with depression of contractile force of striated and/or cardiac muscle. This is exhibited in familial periodic paralysis, where a "low K^+" pattern of the electrocardiogram is seen, or with various rhythm disturbances of the heart, which accompany decided fluctuation of the extracellular K^+ concentration.

The current popular concept is that the rates at which K^+ and Na^+ enter and leave the cell determine the intracellular ionic concentration. These rates vary with the specific time cycle

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of the transmembrane cell potential, and the pattern of the curve influences the excitability, rhythmicity, conductivity and contractility of the muscle fibre. These changes are generally reflected in the actual measurements of the transmembrane potential by an intracellular electrode. Extracellular Na^+ and K^+ concentrations influence these ionic shifts, and certain substances modify their transport within and across the membrane.[13] Digitalis in toxic doses specifically depresses the ionic transport.[33,34]

Different time patterns of the transmembrane potential are exhibited by different cardiac cells and fibres. For example, S-A nodal and A-V nodal tissues show a slow rise and a rapid fall; such a curve tends toward automaticity but poor conduction. The ventricular myocardium exhibits a curve with a rapid rise and a slow fall, with better conduction but poor pacemaking properties. Digitalis causes a rapid fall in the transmembrane potential curves, especially in toxic doses which decrease the periods of absolute and relative refractory states and increase the excitability and the potential induction of extra beats. It also tends to cause a more rapid elevation of the resting potential base-line during depolarization, and thus fires off a successive beat sooner than normal as the "resting" potential rises across the threshold for precipitation of the action current.[6,33,34]

In each contractile cycle of the normal myocardial fibre the following sequence of events occurs (as determined by micropuncture of the heart muscle in dogs[13]): Potassium enters the cell (muscle fibre) actively against an osmotic gradient in early diastole with an increased permeability of the cell membrane. It establishes a potassium concentration of 140 to 150± mEq. per liter and an intracellular negative potential charge of approximately −90 mv. The excitation (contraction onset) is governed by the degree of this charge, which is decreased if sodium (Na^+) leaks actively across the membrane in diastole. With excitation and depolarization followed by contraction, the negative charge is lost and a positive charge of about +40 mv. follows the escape of potassium and the entrance of sodium into the cell. The resting charges and the sodium and potassium concentrations are restored in a rapid phase, (QRS of the electrocardiogram), a plateau phase (S-T of the electrocardiogram) and then gradually as a slow phase through diastole to the original "resting" charges and sodium and potassium concentrations.

Relation of Sodium and Calcium to Potassium and Digitalis Effects.

Sodium deprivation and lowered content in the plasma tends to exaggerate hyperkalemic effects.[32] Excess sodium tends to neutralize hyperkalemic effects, and 3 per cent sodium chloride in intravenous solution has been given therapeutically (as well as calcium, intravenous glucose with insulin, and hemodialysis). In heart failure and low potassium states, excess sodium tends to compromise myocardial integrity and exaggerate failure, presumably replacing potassium in the cell, as was specifically found in acute digitalis intoxication.[18] In early experiments on amphibians, ionized calcium was found to have a positive inotropic effect (contractile) on the heart, lengthening systole, and especially so when potassium concentration was low, thus inducing Ca^{++} rigor.[12] Ca^{++} has a synergistic action with digitalis. Digitalis is inactive in a Ca^{++}-free solution perfusate of the heart. Although excess Ca^{++} associated with digitalis administration precipitates ectopic ventricular beats and tachycardia, Ca^{++} excess without digitalis increases excitability, automaticity and, to a minor degree, acceleration of A-V conduction when in high concentration.[35] Barium has similar action with greater potency. Ca^{++} stabilizes the permeability of the cell membrane to both Na^+ and K^+, decreasing excess shifts of these ions.[13] Plasma Ca^{++} reduction by chelating agents counteracts digitalis toxic effects[2] including the effect of blocking potassium entrance into body cells and the accompanying elevation of plasma potassium.[4,18] Vagal stimulation or acetylcholine increases this phenomenon.

Potassium Influences on Rhythm, Conduction and Electrocardiogram

A. *High Potassium States.*

High potassium states which most frequently cause disturbances in rhythm, conduction and the electrocardiogram are renal failure, hemolysis, hypoadrenal states, traumatic shock, and excess intake of potassium, especially with digitalis blocking cellular uptake or in the presence of renal failure. Quinidine induces a local increase of myocardial potassium.[11]

The results of high potassium states, generally reflected by serum potassium concentrations of over 6 mEq. per liter are:

1. A-V conduction decreased. For example, first degree A-V block, as noted in

Addison's disease,[29] and third degree A-V block, as has been observed in hypoaldosteronism with recurrent Adams Stokes seizures.[14,16] Clinical or experimental uremia has been reported as inducing similar A-V and I-V blocks, due presumably to both an increase of potassium and a decrease of local cholinesterase.[10]

2. Automaticity (rhythmicity) suppressed.
    a. *Sinus node and atrial pacemaker* may be lost at high potassium plasma concentrations. Rhythmicity (heart rate) is generally decreased at the S-A node pacemaker, probably due to vagal and acetylcholine effects. Cardiac standstill was purposely induced transiently by Melrose and coworkers[19] during cardiac operation by perfusing coronary arteries with a solution of high potassium concentration.
    b. High potassium plasma concentration suppresses *ectopic beats and tachycardias* (atrial and ventricular) irrespective of general bodily potassium balance. This probably is associated with local low myocardial potassium content (as in the failing ventricle or in myocardial infarction).[26] Spirolactones antagonize aldosterone and induce potassium retention, thus suppressing arrhythmias (in dogs).[20]
    c. Suppression of lower pacemaking centers (A-V nodal and idio-ventricular) by potassium is recognized. In third degree A-V block it is dangerous to use potassium excessively because cardiac standstill or ventricular fibrillation may be precipitated.
3. Electrocardiographic changes of low potassium states may be summarized as follows:[32]
    a. Plasma potassium concentrations of 5-7 mEq. per liter cause the T wave to become narrow and peaked (tented) and the S-T segment to be slightly prolonged and depressed. (With plasma potassium rise in digitalis toxicity, the flattened "digitalis T" becomes upright.)
    b. Potassium concentration in plasma greater than 6.7-7 mEq. per liter causes widening of the QRS through the entire complex, a first degree A-V block, flattening of the P wave and loss of the U wave.
    c. With plasma K concentrations greater than 8.0 mEq. per liter, the P wave is lost, and the QRS, S-T and T widen and fuse into a single continuous flutter-like form.

B. *Low potassium states.*

It is to be noted that in high potassium states (positive bodily potassium balance or blocked cellular uptake of potassium, as in digitalis toxicity) the blood plasma generally reflects the elevated potassium levels. This can cause critical myocardial or conduction system defects (often without high potassium concentrations within cells, and probably due to cell membrane gradient effects). Low bodily potassium content (cellular and probably cell membrane) is frequently *not* indicated by the potassium concentration of the plasma (extracellular fluid), which may remain in normal ranges. Estimated balances are more reliable indications of possible depletion of potassium (urine potassium output or other potassium loss weighed against estimated potassium intake). Skeletal muscular weakness to the point of areflexia and paralysis may accompany severe prolonged negative potassium balance. It is not a rare finding at present, due to the liberal clinical usage of corticoid and diuretic therapies.

1. *Causes of bodily loss of potassium include:*
    a. *Diuretic* agents, when frequently used —that is, every one to three days, and especially when used for longer than three weeks and when there has been sodium depletion (retaining sodium in exchange for potassium). Mercurial compounds and acetazolamide (Diamox®) cause potassium loss, but the drugs of the thiazide group probably cause more potassium loss than those diuretics because of action in both proximal and distal renal tubules. A greater potassium loss occurs in rats after removal of the adrenal glands than in normal rats, possibly due to a spirolactone effect.[9]
    b. Starvation of potassium-containing foodstuffs and faulty gastrointestinal tract absorption.
    c. Diarrhea or gastrointestinal tract drainage (by tube or surgical fistula).
    d. Potassium-losing chronic renal disease (rare).

- e. Adrenal-corticoid therapy (especially with aldosterone).
- f. Adrenal-corticoid hypersecretion, including stress reactions (to surgical operation, for example).
- g. Thyrotoxicosis.
- h. Familial periodic paralysis.
- i. Wasting disease of muscles (which may be associated with myocardial degeneration).
- j. Muscular overwork.
- k. Acidosis.
- l. Dehydration.
- m. Ischemia.
- n. Edema.
- o. Metabolic alkalosis.

2. *Transient depression of plasma potassium is induced by:*
   - a. Extracorporeal circulation by pump oxygenator as used in cardiac surgical operations.
   - b. Large carbohydrate intake, especially with use of insulin. (T wave flattening is found transiently after a large meal—Effect may be reflex).
   - c. Epinephrine and possibly in norepinephrine administration.
3. *Local loss from myocardium has been measured in:*
   - a. Myocardial failure (localized to specific chamber).
   - b. Myocardial infarction.
   - c. Digitalis intoxication (also possibly induces general body cellular potassium loss with high therapeutic and toxic doses).
4. *Effects on Rhythm and the Electrocardiogram of the Low Potassium States Include:*[32]
   - a. A-V conduction is slightly delayed, especially with plasma potassium less than 2.8 mEq. per liter.
   - b. Ventricular and especially atrial ectopic beats appear frequently if plasma potassium concentration is less than 2.6 mEq. per liter, but not as consistently as with digitalis therapy.

     Digitalis precipitates paroxysmal ventricular tachycardia with 60 per cent of the expected "normal" dose if 5 to 10 per cent of body potassium is depleted.[5] The most frequent arrhythmias in digitalis intoxication with low potassium states are atrial ectopic beats and paroxysmal atrial tachycardia (with and without A-V block). Paroxysmal atrial tachycardia with A-V block is the most serious arrhythmia; even with treatment the mortality is 50 per cent. This arrhythmia also is found in digitalis intoxication without potassium loss and without digitalis therapy in various types of heart disease, especially with heart failure.[17]

     Other arrhythmias, observed with digitalis and low potassium states[5] were S-A block, A-V dissociation (A-V block with ventricular rate greater than atrial rate), wandering pacemaker, and A-V nodal rhythm (a clinically deceptive regular rhythm with a normal ventricular rate occasionally observed with high digitalis doses in patients with atrial fibrillation). Both atrial flutter and atrial fibrillation have been precipitated by digitalis with the low potassium syndrome, specifically after cardiac operations with extracorporeal circulation, but are relatively uncommon results of this combined situation. Sinus tachycardia is occasionally caused in low potassium states by inhibition of the acetylcholine rate-slowing effect of the vagus. This "vagal" blocking effect is not as apparent on A-V nodal conduction.
5. *Effects on the Electrocardiogram in the Low Potassium States are:*
   - a. P waves increased in amplitude.
   - b. Q-T (Q-U) duration is prolonged.
   - c. Slight depression of S-T segment.
   - d. "T" waves are flattened.

POTASSIUM THERAPY*

Potassium therapy abolishes these low potassium state arrhythmias in about 90 per cent of cases. It is effective on arrhythmias, other than atrial flutter or fibrillation, in a smaller proportion (about 50 per cent) of patients with organic heart disease and no potassium depletion, and still less effective on arrhythmias without organic heart disease. Potassium may be administered orally in a 25 per cent solution of potassium citrate or similar relatively well-tolerated salts in doses of from 5 to 25 cc. (15 to 75± mEq. of potassium). When administered intravenously (1 gm. of KCl contains 13 mEq. of potassium), KCl should be given slowly because of the danger of induced cardiac standstill or ventricular fibrillation. Rarely should more than 40 mEq. be given intravenously within two hours, or a total of 90 mEq. within one day. Careful watch must be kept for possible abrupt hyperkalemia development. Doses may be repeated orally or intravenously as the need is indicated by plasma potassium concentration, which is regularly monitored. Unless continued potassium depletion is occurring, high dosage of potassium is not maintained as continuous therapy for control of ectopic rhythms. The plasma potassium concentration generally rises to a peak in between three-quarters of an hour and one and a half hours after an oral dose (for example, 5 gm. of potassium citrate). The suppressive effect on the arrhythmia may persist for four to eight hours or indefinitely terminate the ectopic rhythms, including extrasystoles. The plasma potassium concentration elevation is no certain clue to the duration of effect.

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*Reference Nos. 17, 26, 27.

BODY AND MYOCARDIAL POTASSIUM CONTENT

Various estimates have been given of total potassium content of the entire body. The average normal exchangeable (largely ionized) body potassium is 3,100 mEq. (46 mEq. per Kg. of body weight, 97 per cent of it intracellular). According to Deuxchaisnes and associates[21] total body sodium averaged 2,600 mEq. (60 per cent extracellular). The latter authors' report indicates the average amount of tissue potassium loss, by measure of the relatively low total body exchangeable potassium: (1) In chronic heart failure with edema it was an average of 2,000 mEq. (26.2 mEq. per Kg.), and without edema was 2,016 mEq. (31.5 mEq. per Kg.); (2) in amyotrophy or progressive muscular dystrophy 1,250 mEq. (25 mEq. per Kg.), and (3) in wasting diseases 1,700 to 2,225 mEq. (34 to 45 mEq. per Kg.). The average serum sodium concentration remained normal in the above states (138 to 140 mEq. per liter) and serum potassium was 4.0 to 4.3 in heart failure with and without edema, respectively, emphasizing the failure of serum levels of potassium to reflect low intracellular (myocardial) content or cell membrane gradients.

Intracellular content of potassium differs widely throughout the body. For example, erythrocytes and skeletal muscles contain about 100 mEq. per liter and nerve cells 132 mEq. per liter, as does myocardial muscle fibre but with variation in different parts of the heart. Hecht[13] gives a working level of intracellular (fibre) myocardial K^+ of 150 mEq. per liter concentration, 6 mEq. per liter of Na^+ and 4 mEq. per liter of Cl^-; and extracellular K^+ of 5 mEq. per liter, Na^+ 159 mEq. per liter, Cl^- 127 mEq. per liter. (These values all seem high and are more appropriate to nerve tissue potassium concentrations and to species other than man.)

The amount of sodium entering a cell to participate in depolarization is given by Johnson[15] as 15 micromicrograms per square centimeter of cell membrane per beat. Since exchange of Na^+ and K^+ is assumed to be nearly equal during the contraction and relaxation cycle, this amount of K^+ may be assumed to leave and later reenter the muscle.

The average normal intake of potassium in adults is between 40 and 60 mEq. per liter daily. Replacement of excessive potassium loss as measured generally in urine, is by oral potassium salts or high potassium diet.

RELEVANT QUALITIES OF DIGITALIS ACTION

It is now recognized that digitalis increases the force of myocardial contraction in both the failing and the normal heart.[1] The mode of action of digitalis glycosides in modifying the contractile mechanism of the myocardium so as to increase the force of cardiac output in low output heart failure is unknown.[22] It attaches firmly to the myosin (4 to 10 mcgm. per gm.) rather than to mitochondria,[7] and several actions have been suggested:

1. It improves spiraling and shortening of actomyosin molecule;

2. It increases potassium entrance permeability or decreases cell loss across the cell membrane during the repolarization phase with proportionate increase of contractile quality in the failing heart;

3. It improves myocardial metabolism of carbohydrate. (Glucose tends to increase and pyruvate to decrease cell membrane permeability to potassium.) The drug obviously operates in extremely low concentrations—estimated at 60 mcgm. per Kg. of heart muscle, or 1:10,000 parts of heart muscle protein.[22] It is assumed, therefore, that digitalis alters a protein, probably an enzyme, that is also present in low concentration. It is assumed further that the activated protein is then more potent in producing its effect on the myocardium, as by possibly modifying the entry of an ion (for example, K^+) into the cell or directly affecting the contractile reaction of the myofibril.

Dosage of Digitalis Glycosides

Different digitalis glycosides (e.g., digitalis leaf, digitoxin, digoxin, gitalin, strophanthin, lantoside C) exhibit different rates of gastrointestinal tract absorption, peak timing and disposition, as well as therapeutic and toxic dosage standards.

1. Variation of dose of the same product is extreme—dependent upon unknown individual biological qualities, both in therapeutic effects (for example, digitoxin, 1 to 2 mg. orally, is an *average* therapeutic range) and in toxicity (which may be induced by 0.25 mg. in one patient, but not by a dosage of 5.0 mg. in another).

2. The more prolonged and severe the heart failure, the less the therapeutic response and the greater the tendency toward toxicity.

3. Excessive thyroid hormones (triiodothyronine) will increase the therapeutic dose requirement to four times the normal (as required to effectively slow ventricular rate in atrial fibrillation). The action of the thyroid hormone is blocked by reserpine —probably through depleting norepinephrine tissue stores.[8] This indicates that thyroid is necessary to mediate the norepinephrine contractile effect on the myocardium, and induce toxicity.

4. The liver's functional integrity influences digitalis dosage by presumptive detoxifying or denaturing effect. For example, the toxic dose of crude digitalis injected into the portal vein is two times to three times greater than the toxic dose given into the systemic circulation. Liver disease (cirrhosis or cardiac congestion) increases the tendency toward toxicity in smaller doses.[17]

5. Myocardial hypoxia or damage (as by bacterial toxins) increases the tendency toward digitalis toxicity.

The latter two factors may well account for the difficulty in controlling congestive heart failure by digitalis and diuretics without precipitating paroxysmal atrial tachycardia with A-V block when the patient's activity and sodium dietary intake is uncontrolled. In contrast, when the heart failure is better controlled by diet and rest in a hospital, a patient can be given the same doses of digitalis and diuretic agent, and at approximately the same body potassium content, without inducing arrhythmias.

6. Toxic doses of digitalis (and possibly to a small degree, nontoxic doses) cause potassium loss from the myofibril. Sanyal and Saunders[28] noted in guinea pigs a 21 per cent decrease of potassium after sufficient ouabaine had been given to induce ventricular ectopic beats in the heart. Potassium is lost from body tissues in man with digitalis therapy before changes occur in the electrocardiogram. This has been the basis for the oral or parenteral use of potassium as an antidote for digitalis toxicity,[27] but with due caution to avoid an abrupt and dangerous rise in serum potassium, which may be readily induced with concurrent renal insufficiency.

Toxic doses of digitalis are now recognized to block the uptake of potassium by body tissues and to precipitate a rapid and dangerous rise of serum potassium.[4] This was demonstrated in dogs by the finding, after toxic doses of digitoxin, of a 30 to 50 per cent higher potassium serum level and a higher mortality on KCl infusion than in dogs not given toxic doses of digitalis. Similar findings are reported by Lown and coworkers,[18] who noted in dogs that the cellular uptake of potassium was blocked by toxic doses of digitalis. This was shown by a potassium rise in the arterial serum of 0.7 mEq. per liter. There was a concomitant fall of serum sodium. When this potassium rise occurs in human subjects given toxic doses of digitalis, nearly one-half of the patients have a terminal peaked elevation of T waves, as contrasted to flat or inverted T wave (and depressed S-T segment) before this potassium tissue block. This mechanism may explain in digitalized patients the unusually abrupt rise of serum potassium to dangerous levels when amounts of potassium administered were obviously only a small percentage of known bodily potassium depletion.

In potassium depletion states with ectopic tachycardia, it is extremely difficult to distinguish between the type of arrhythmia due to digitalis intoxication and that due to inadequate digitalization. The serum potassium, the pattern of the electrocardiogram, a history of administration of potassium-losing diuretics and of "adequate" digitalis doses may be the deciding determinants. Often, however, these pieces of information are not helpful. The technique used by Lown and others is to administer 0.1 to 0.2 mg. of strophanthidin intravenously and, if necessary, repeat in one-half hour. If the rate becomes slow, then the probability is that more digitalis is required. In one such case Friedberg[6] observed prompt slowing on administration of 5.0 mg. of digitoxin after potassium and digitalis in smaller doses had been ineffective.

Conversely, Lown and Levine[17] warned that many fatalities are induced by the persistent use of digitalis after atrial tachycardia has been induced by toxic doses of the drug.

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Trichomoniasis

Clinical Trial of Metronidazole (Flagyl®)

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• Metronidazole was given in various dosage regimens to 97 patients having microscopically diagnosed trichomoniasis.

At the first examination after treatment all 97, including 76 to whom metronidazole had been given orally only, were found by culture and wet smear to be free of trichomonads.

Reexamination of the 65 patients followed up for periods ranging from two weeks to 14 months revealed reappearance of trichomonads in eight cases.

Nineteen husbands were treated. No patient had a recurrence after treatment of the husband.

No effect of metronidazole on pregnancy or on fetal development was seen. Side effects, noted in 19 cases (20 per cent), generally were mild and transient and in no case were severe enough to terminate therapy before cure was effected.

Recognizing trichomoniasis as a common cause of distressing vaginitis not amenable to cure by topical therapy, we welcomed the opportunity to evaluate metronidazole, a trichomonacide developed for oral administration. Encouraging results, reported in 1959, of comparative pharmacologic studies showing superior trichomonacidal activity for metronidazole soon were followed by reports of clinical studies[6,9] showing that trichomonacidal concentrations are achieved in serum and urine by oral administration of metronidazole in therapeutic dosages. Reports of early therapeutic trials of this drug were equally encouraging, and now have been confirmed by numerous clinical investigators who have reported consistently high cure rates with minimal side effects.[1-4,6-18]

METHODS AND MATERIALS

Metronidazole was given to 138 patients drawn from those attending a small medical group in a city of southern California having a population of 37,000. Of these, 41 were lost to follow-up, leaving a series of 97 for evaluation of results. Ages ranged from 14 years to 52 years, 73 being between ages 21 and 40. Seventy-one were married; 24 were divorced, separated or widowed; and five were single. Duration of trichomonal infection, shown in Table 1, varied from a few days to 35 years. Of the 97 patients, 22 were asymptomatic, the other 75 accounting for the 104 complaints shown in Table 2. Twenty-five patients were pregnant when treated, ten in the first trimester, five in the second and ten in the third.

Diagnosis of trichomoniasis was confirmed microscopically in all cases. The immediate examination of wet smear (secured by using a cotton-tipped applicator, which when well filled with exudate is agitated in a small amount of normal saline solution in a test tube) has proved efficient. When motile, the trichomonads are seen readily under low power magnification.

After recent douching it may not be possible to find motile trichomonads, making culture necessary.

TABLE 1.—*Duration of Trichomoniasis* at Beginning of Treatment with Metronidazole.*

	No. Patients
0- 1 month	7
1- 6 months	9
7-12 months	7
2- 5 years	20
6-10 years	11
11-20 years	6
21-30 years	1
31-40 years	1
Unknown	35
	97

*From onset of symptoms.

TABLE 2.—*Symptoms Associated with Trichomoniasis in 97 Patients.*

		No. Patients
No complaints		22
Complaints		75
Leukorrhea	66	
Pruritus	15	
Scalding discharge	7	
Vaginal irritation	6	
Urinary frequency	3	
Burning on micturition	2	
Pelvic discomfort	1	
Serosanguineous discharge	1	
Urethritis	1	
Dyspareunia	1	
Pain on douching	1	
	104	

Flagyl®, a brand of metronidazole, was supplied for this study by G. D. Searle & Co.

Submitted December 7, 1962.

TABLE 3.—*Results of Treatment with Metronidazole in 97 Patients with Microscopically Confirmed Trichomoniasis*

Daily Dosage	Number of Patients	Microscopic Findings at First Examination After Treatment		Patients Lost to Follow-up	Microscopic Findings at Subsequent Follow-up Examinations	
		Neg.	Pos.		Neg.	Pos.
100 mg orally for 10 days	67	67	0	23	39	5
1000 mg orally + 1000 mg vaginally for 10 days	19	19	0	4	12	3
500 mg orally for 10 days	7	7	0	4	3	0
1000 mg orally for 7 days	2	2	0	1	1	0
1000 mg orally + 1000 mg vaginally for 10 days	1	1	0	0	1	0
1000 mg vaginally for 10 days	1	1	0	0	1	0
Total	97	97	0	32	57	8

Our present practice is to culture in Kufferberg Trichosel broth. Cultures are examined at 48 to 96 hours. The following staining method has worked best in our laboratory: An air-dried smear is stained immediately with Giemsa tissue stain, Wolbach modification. The undiluted stain is left on the slide about one minute and then an equal amount of phosphate buffer at pH 7.2 is added. Staining is continued for two to three minutes.

Various dosage regimens were prescribed, including oral therapy alone in 76 cases, vaginal therapy alone in one case, and combinations of oral and vaginal therapy in 20 cases. Both tablets and suppositories were given in divided doses, twice daily. (See Table 3.)

All patients were asked to return within a week following the end of treatment and an attempt was made to see them several times subsequently at monthly intervals. A few patients have been followed for more than a year. The first examination after treatment included culture in 73 cases and wet smear in 96. Follow-up examination of 65 patients included culture in 52 cases and wet smear in 65.

RESULTS

As shown in Table 3, there were no failures as judged by wet smears and cultures at the first examination after treatment. Among the 75 symptomatic patients, all reported alleviation of symptoms within 48 to 72 hours after start of treatment.

Reexamination of the 65 patients followed up after apparent cure revealed reappearance of trichomonads in eight. Except for two lost to follow-up, these patients were retreated as often as indicated by reappearance of trichomonads. One of these eight patients now has had a total of four courses of metronidazole. Each of her first two repeat courses resulted again in apparent cure, but again follow-up examinations disclosed trichomonads. After the third such recurrence the husband's urine was cultured and found positive for trichomonads. He was then given a course of oral metronidazole at the same time as the wife was given her fourth course. At the time of this report she had remained negative for trichomonads for five weeks.

TABLE 4.—*History of Ten Cases of Previously "Intractable" Trichomoniasis and Length of Follow-up After Apparent Cure with Metronidazole*

Case No.	Duration	
	Infection*	Follow-up
19	10 years	3 months
53	10 years	14 months
95	over 10 years	2 weeks
1	12 years	1 month
15	12 years	5 months
2	14 years	5½ months
16	15 years	2½ weeks
82	20 years	1 month
76	30 years	9 months
85	35 years	2½ months

*From onset of symptoms.

TABLE 5.—*Relative Incidence of Side Effects Attributed to Metronidazole by 19 of 97 Patients (19.6 Per Cent)*

Complaint	No. Patients
Nausea	5
Vomiting	2
Gastric upset	3
Abdominal cramps	2
Malaise	1
Iron taste	2
Burning tongue	1
Generalized itching	2
Itching and burning of vagina	2
Dry mouth	1
Dizziness	1
Grogginess	1
Back pain	1

A total of 19 husbands now have been treated. No patient has had a recurrence after treatment of the husband.

Because all patients in the series were negative for trichomonads at the first examination after treatment, any influence that pregnancy may have on the responsiveness of trichomoniasis to metronidazole was not discernible. Of the eight recurrences, however, two were pregnant patients. Careful observation in the 25 cases in which metronidazole was administered during pregnancy revealed no deleterious effect on pregnancy or fetal development.

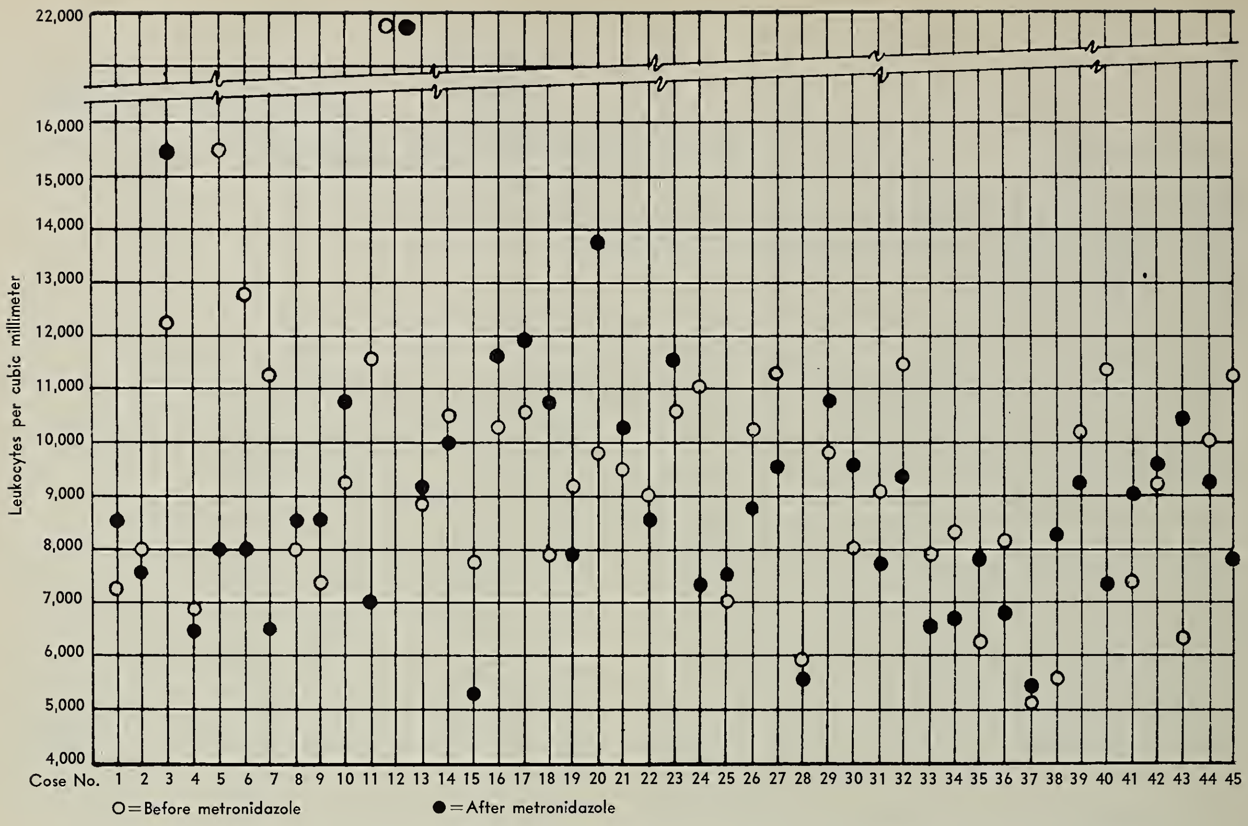

Chart 1.—Leukocyte counts in 45 patients immediately before and after treatment with metronidazole.

Rapidity of Action

To determine how rapidly metronidazole would eliminate trichomonads, a special study was made of 24 patients in the series. It was found that two patients became negative within 48 hours after start of therapy, three in 96 hours, four in four days, six in five days, two in six days and one in seven days, the remaining six being found negative in eight to fourteen days.

"Intractable" Cases

Ten patients had had trichomoniasis for ten years or more, and one had been given a variety of treatments during 35 years without a cure. (See Table 4.) Each of these ten was relieved of symptoms promptly and was proved free of trichomonads as judged by culture and wet smear. These patients were among the most grateful, as they had practically given up hope of permanent relief.

SIDE EFFECTS

The 24 complaints of side effects (listed in Table 5) were made by 19 patients. The two who complained of vaginal symptoms were using metronidazole suppositories. Although several investigators have found that concentrated specimens of urine from patients taking metronidazole may have a reddish-brown color, no patient in our series remarked about any change in the urine.

With reassurance and instruction to take the tablets immediately after meals, all patients were able to continue therapy until cure was effected. For one patient a side effect was severe enough to necessitate discontinuing therapy. This patient, who because of nausea took only 26 of her 40 tablets, nevertheless was free of trichomonads when examined after her shortened course of therapy.

Leukocyte counts were done at the start and after conclusion of treatment in 45 cases. No significant changes were noted. See Chart 1.

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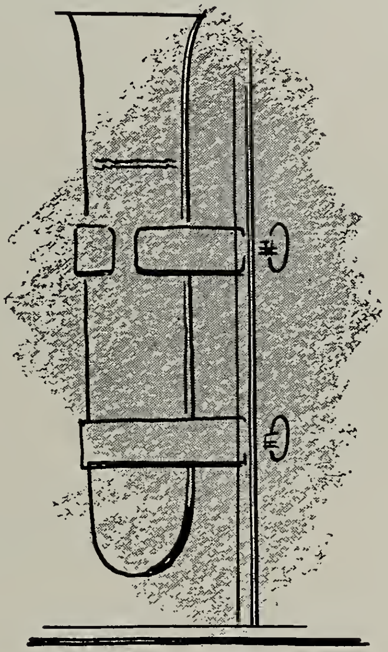

The Erect Lateral Lumbar Roentgenogram in the Evaluation of "Low Back" Pain

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• A study was made of the potential value of the erect lateral flexion lumbar roentgenogram in a series of 50 adults, some with symptoms of low back pain and some without such symptoms. The film was made in addition to the standard antero-posterior, lateral and sometimes oblique views taken in the recumbent position.

In 11 of 37 patients with low back pain, some narrowing of lumbar discs was visible in both horizontal and erect lateral films, the degree being not significantly different between the two positions. In one patient, localized anterior narrowing of a lumbar disc, which was not visible in the recumbent lateral film, was observed. This finding was confirmed at a subsequent examination.

In one of 13 patients without lumbar area symptoms, slight anterior narrowing of a lumbar disc could be seen in the erect lateral film but not in the horizontal. The reason for this is not known; it may be physiologic in this particular patient.

The value of the routine erect lateral flexion lumbar roentgenogram was not confirmed by this preliminary study.

ROENTGENOLOGICAL EXAMINATION of the lumbar spine in patients with low back pain may disclose evidence of injury, disease or degenerative disorders in the bones, joints or soft tissues. "Routine" examination ranges from single antero-posterior (A.P.) and lateral films of the lumbar area, to stereo A.P., oblique, lateral and angled-beam films made with the patient in various positions. From time to time, clinicians have advocated the addition of "bending" studies, in the A.P. or lateral position (or both) usually with the patient erect or sitting, and principally in patients without evidence of gross bony disorder.

In the evaluation of bone "fusion" procedures, such bending studies are sometimes of value, especially when stereoscopic or tomographic sets are made. However, in the study of unselected patients with "low back" pain, taking A.P. films with the patient bending laterally to the left and right has been largely discarded as yielding little useful information. Erect lateral lumbar spine views, made with the patient in flexion or bending forward, are still advocated by some orthopedists. The present paper reports a preliminary study of the apparent value of this procedure.

EVIDENCE OF DISC DISORDER

Since alterations in vertebral body relationships are sometimes due to or ascribed to *disc or nucleus pulposus* disorders, it may be well to consider the roentgen aspects of this condition. Roentgenological evidence of lumbar disc disorder may be direct or indirect:

Direct

a. Intravertebral body protrusion ("Schmorl's node").

b. Marginal vertebral body cleft (limbus vertebra).

c. Localized indentation of contrast-filled subarachnoid space.

d. Altered outline of contrast-filled nucleus pulposus.

Indirect

a. Vertebral body osteophytes.

b. Altered intervertebral body spaces.

c. Localized alteration in the normal curvature of the spine on flexion or extension, or on lateral bending.

It is to demonstrate this latter finding that the erect lateral roentgenogram is reportedly chiefly useful.

In passing, it should be noted that a narrow or "thinned" lumbar disc space per se is not well correlated with pain or injury. In some adults thinning is apparently due to loss of fluid in the disc or to extrusion of the nucleus pulposus, and is not associated with retropulsion or posterior herniation of the disc; the disc has lost volume in its sagittal as well as its cranio-caudad diameters.

METHOD

A consecutive series of adults with "low back" pain was examined with conventional A.P. and lateral projections in the recumbent position, and then

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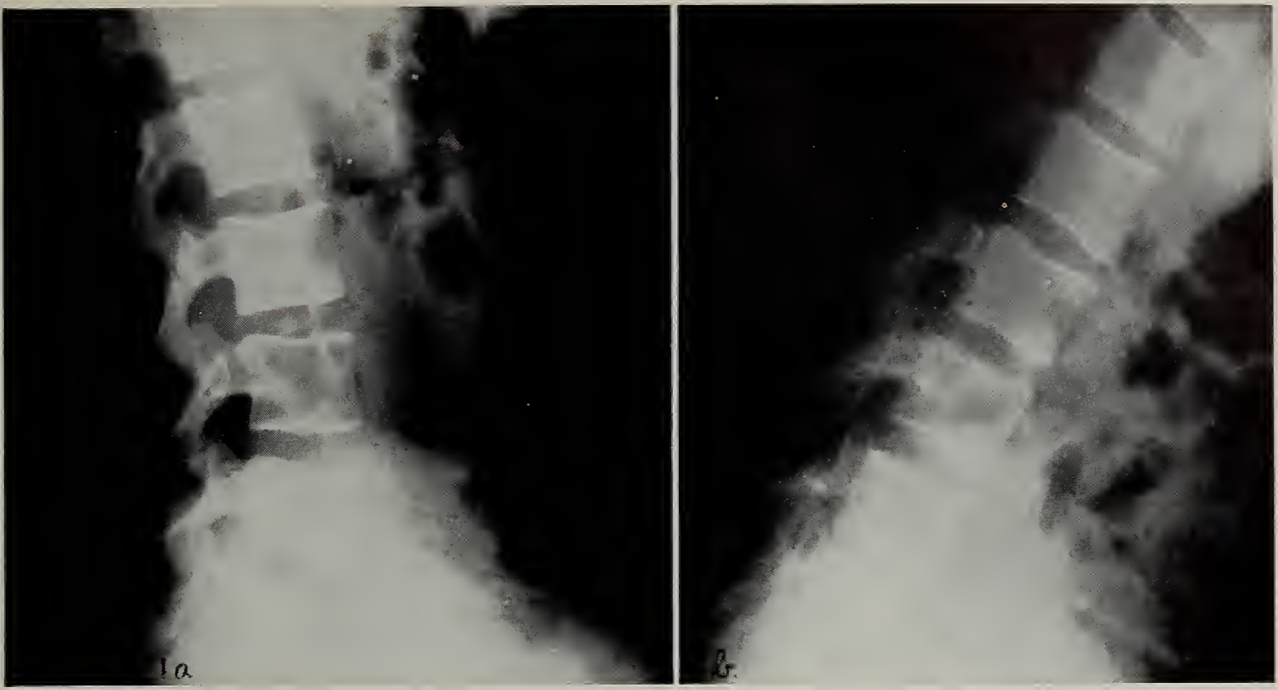

Figure 1.—The patient was a clinically normal man 24 years of age without lumbar symptoms. *Left,* conventional recumbent or horizontal lateral lumbar spine. *Right,* same patient erect, flexion. Note the fairly uniform slight anterior narrowing of the lumbar discs in flexion.

an erect or standing lateral projection was made with the patient instructed to bend forward. The patient was told to put his hands on his knees and then to arch the lumbar spine. A few patients merely flexed from the lumbosacral level without significant "arch" either from lack of ability (perhaps from muscle spasm or stiffness), or lack of comprehension, or unwillingness to cooperate. The age range of the patients was from 20 to 70 years, a majority being close to 40. There were 39 men and 11 women. All were ambulatory.

Of the 50 patients, 37 reported symptoms of lumbar backache, acute, subacute or chronic. Thirteen had no symptoms referable to the lumbar spine. They served as a small control series.

One of the symptomatic cases was rechecked on a second occasion, and one of the nonsymptomatic cases was rechecked on two occasions, without essential differences in the findings.

FINDINGS

In 13 patients without symptoms of lumbar backache the following findings were noted:

- Uniform (or fairly uniform) slight anterior narrowing of most of the lumbar discs in erect flexion—eight patients.
- No significant anterior narrowing of lumbar discs in erect flexion—four patients. (This may sometimes be due to the patient's not understanding the instructions and merely bending from the pelvis rather than arching the back.)
- Localized anterior narrowing of a disc only in the erect position, the narrowing being of slight degree—one patient.
- Sharply localized alteration in lumbar curvature—no patients.

An example of one of the "normal" studies is shown in Figure 1.

In 37 patients with symptoms of lumbar backache, the following findings were noted:

- Uniform (or fairly uniform) slight anterior narrowing of lumbar discs in erect flexion—23 patients.
- No significant anterior narrowing of lumbar discs in erect flexion (or, if narrowing was present in the recumbent position, no additional narrowing in the erect flexion view)—12 patients.
- Localized anterior narrowing of a disc, in erect flexion only—one patient definite; one patient questionable.
- Sharply localized alteration in lumbar curvature—no patients.

In 11 patients there was some narrowing or thinning of lumbar discs visible in both horizontal and erect lateral films, but not noticeably different in degree in the erect position. The erect lateral did not add to the information in these cases.

The one case with localized anterior disc narrowing visible only in the erect film showed this change at the L-4 disc level. (See Figures 2 and 3.)

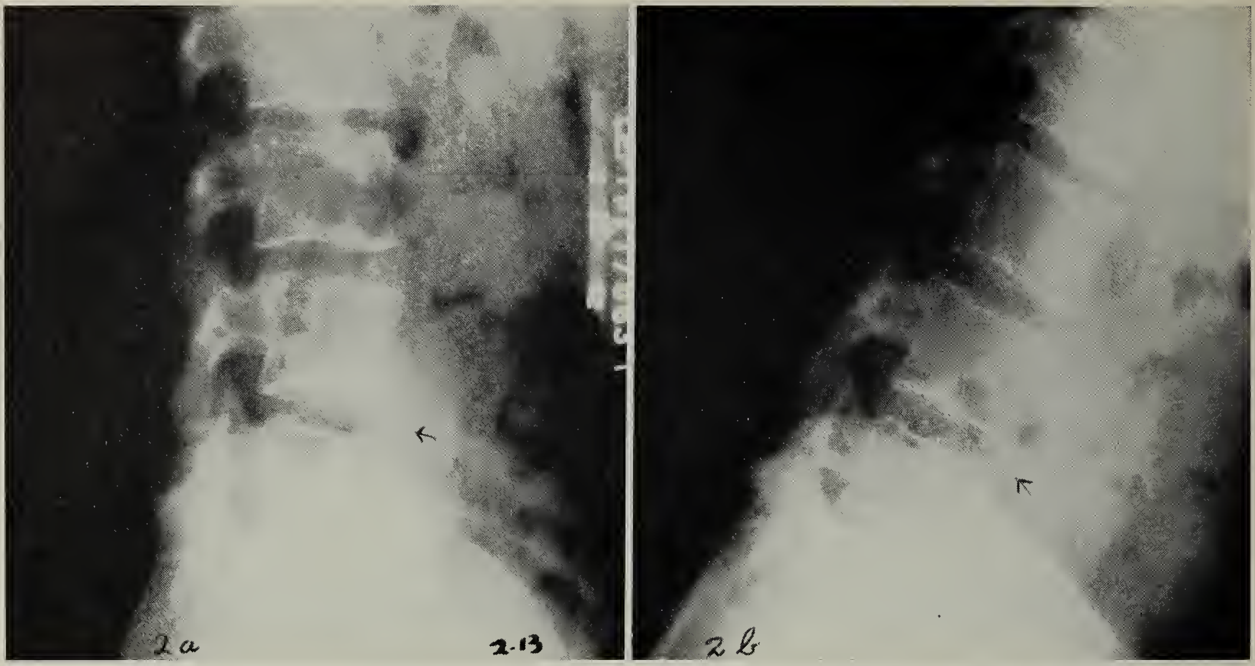

Figure 2.—The patient was a 34-year-old man with lumbar backache of about four weeks' duration that he said was of sudden onset, following the lifting of a heavy weight. He had some pain radiating down left leg. *Left,* conventional horizontal lateral film showing a narrow 5th disc. *Right,* the erect lateral flexion view. This reveals, in addition, slight anterior narrowing of 4th lumbar disc, a change localized to this level and reported to be potentially significant.

DISCUSSION

To the best of our knowledge, the value of the erect lateral flexion lumbar roentgenogram has not been critically studied. References to erect lateral films without flexion are fairly numerous. For example, Chamberlain,[2] in a discussion of a panel on low back pain some years ago, expressed the opinion that erect lateral lumbar spine films are useful. He believed that by their use he detected more displacement in patients with spondylolisthesis and found it easier to recognize separations of the neural arch. He did not dilate on the value of erect flexion films.

Blonek[1] believed that one of the frequent causes of low back pain is an unstable lumbosacral angle. "This condition can be demonstrated only by two lateral films, one taken in the lateral decubitus and the other with the patient standing erect." He did not describe lateral erect *flexion* studies.

Friedman[3] thought that increase in the lumbosacral angle in changing from the recumbent to the erect position is of value in the diagnosis of certain disorders. He did not specify erect flexion lateral views.

Morgan and King[6] believed that instability of the lumbar vertebrae can best be shown in lateral films in the sitting or standing positions, made in both flexion and extension. The commonest site of instability is regarded as L-4, "where the upper body moves backward on L-5 in extension and forward in flexion." They did not discuss the reported significance of sharply localized alteration in curvature.

Some years ago Hasner and coworkers[5] made "functional roentgenological" examinations of the lumbar spine in a series of 90 patients whose average age was 38 years. Most had symptoms of low back pain, with or without sciatica. Reporting their observations, the Hasner group wrote:

"The normal movements of the spinal column are flexion, extension, lateral bending, circumduction and rotation. The functional roentgen examination of the lumbar spine performed by us includes the first three mentioned postures only. Sagittal views of the spine are taken with the patient in the sitting position and bent forwards and backwards respectively; frontal views are taken with the sitting patient bending sideways. Normally, on bending forwards, the lumbar spine has a smooth curve with the vertebral bodies converging anteriorly in the concavity of the column. The opposite occurs when bending backwards. The vertebral bodies now form angles with each other posteriorly. Notwithstanding the considerable degree of hyperlordosis produced in this way, the posterior margins of the vertebrae are situated along the same arcuate line. There is normally no parallel dislocation of the vertebrae.

"In pathologic cases of flexion and extension, the spinal column is seen to be more or less straight, and the superior and inferior planes of the vertebral bodies present only a slight degree of angulation to one another."

Some 85 of the patients in the series showed what the investigators interpreted as altered mobility of

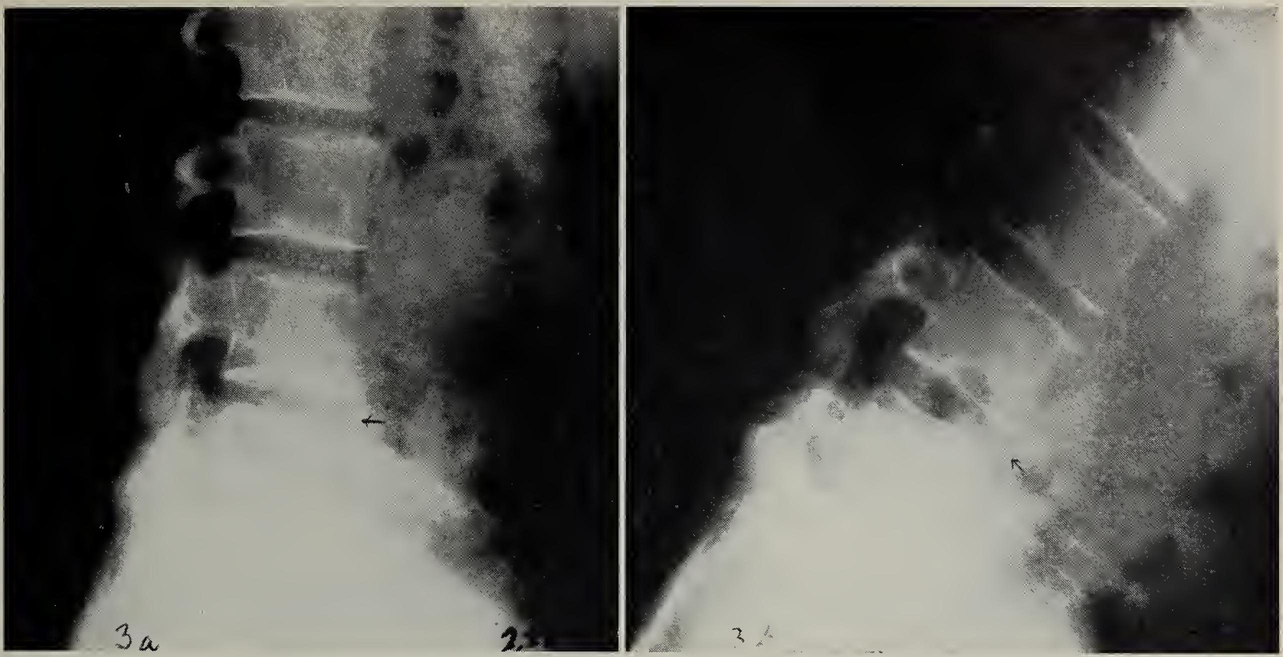

Figure 3.—Same patient as in Figure 2, reexamined after two weeks. The erect lateral flexion film is again "positive," and the localized anterior narrowing of one lumbar disc found only in the erect lateral flexion study is a little more evident.

the lumbar spine, most of them with "abnormal angulation." However, they made no note of specific virtues in erect lateral flexion studies.

Gianturco[4] examined the lumbosacral spine in 20 asymptomatic and 35 symptomatic patients. With the patient in the erect sitting position and the pelvis immobilized, lateral films were obtained with the spine at rest, in flexion and in extension. His report is concerned mainly with the position of the fulcra of motion of the lower three lumbar discs. In his opinion any attempt to explain abnormal vertebral motion must take into consideration all the factors involved in movements of the spine, namely (1) neuromuscular actions, (2) bony lesions, if any, (3) posterior articulation structure and disorders (if any) and (4) intervertebral disc lesions. All of the 20 asymptomatic persons and 20 of the 35 symtomatic patients showed what Gianturco regarded as normal motion. He did not discuss the relative utility (if any) of the erect lateral in flexion.

COMMENT

The gonadal exposure from erect lateral roentgenograms of the lumbosacral spine made with modern technique, while quite small, is not negligible. It amounts in the average adult female to about 250 mr and in the average adult male to about 25 mr, with technical factors that are commonly employed in the San Francisco Bay Area. The use of this view as an added procedure, if it does not provide significant information, may therefore be questioned. It may be substituted for the horizontal view without added exposure.

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The Tragic Fate of Ignaz Philipp Semmelweis

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It is generally believed that the mental breakdown of Ignaz Philipp Semmelweis was due to continuous emotional strain and frustration during his long struggle for recognition of the fundamental discovery he had made. A study of his disease history and of the autopsy report from Rokitansky's Institute of Pathology at the University of Vienna, however, makes a revision of this scientifically questionable belief necessary.

The scientific achievements of the "conqueror of childbed fever" are well known. Semmelweis probably was the first to use a statistical method to prove his point, and he drew the practical conclusions of his concept energetically and successfully. The mortality of childbed fever in some large lying-in hospitals of Vienna and the rest of the world had been sometimes as high as 18 per cent. By the use of preventive measures recommended by Semmelweis, the rate was reduced to 2 per cent and sometimes less. This was long before the actual offender, the Streptococcus, was discovered by Louis Pasteur.

It is likewise known how many difficulties Semmelweis encountered, how many barriers he had to break and what strong resistance to overcome in order to be recognized as savior of thousands of mothers-to-be—the recognition that came long after his death. The reactionary, ultraconservative trend of the Austrian government under Metternich changed only slightly after the revolution and Metternich's downfall in 1848, and its influence on the medical faculty of the University of Vienna remained stronger than the liberal and enlightened "stars" of contemporary medicine in Vienna: Karl von Rokitansky, the pathologist; Joseph Skoda, the internist, and Ferdinand von Hebra, the father of dermatology as a specialty. They were friends and enthusiastic supporters of Semmelweis.

Johann Klein, however (the professor of obstetrics who had been declared by Boer, his teacher and predecessor, to be the poorest candidate for this job) had a more powerful influence on the ministry of education. And he antagonized his brilliant assistant, Semmelweis, whenever and however he could. Klein was a conservative authoritarian bureaucrat, opposed to anything new, adherent to tradition and trammeled in red tape. Also opposed to Semmelweis' teaching, at least at first, were Virchow, Scanzoni, Sir James Simpson, the leading obstetricians of Paris and Prague, and many of the Germans. They all were internationally respected authorities at that time. Resisting the urgings of his friends, Semmelweis waited far too long to write his book, *The Etiology, Concept, and Prophylaxis of Puerperal Fever*, which was published in 1861. He had always disliked public appearance, lectures and publications of his work. His friends, von Hebra as editor of the Vienna medical weekly, and Markusovszky of *Orvos Hetilap* in Budapest, had done these things in his stead several times.

The reviews of his book when at last it came were generally unfavorable. In Vienna's University Lying-in Hospital the mortality of puerperal fever had risen to an unprecedented high. In the autumn of 1860 35 out of 100 women had died of it. Semmelweis, who had by that time taken a professorship in Budapest had not even been considered as Klein's successor upon the death of the latter in 1856. One of his adversaries, Karl Braun, had been appointed to the coveted professorship of obstetrics in Vienna.

Semmelweis could not get rid of the compulsive idea that countless women and babies could have been saved if his doctrine had been accepted. He became preoccupied with resentment and aggressive tendencies, was gloomy, depressed and even suspicious of his friends. He was irascible and his behavior erratic. In "open letters" to professors of obstetrics who ignored his teaching, he accused them of murder and inexcusable irresponsibility.

The numerous biographers of Semmelweis concur in the opinion that the tragic life experience of this remarkable man destroyed his mind and made him a "martyr to the world's stupidity." One of Semmelweis' followers, citing the legend that Pythagoras had sacrified a hecatomb of oxen when he discovered his theorem, noted with some bitterness that ever since that time oxen are instinctively frightened when a new truth has been discovered. The American biographer Frank G. Slaughter, writing in 1950, summarized the current concept of Semmelweis' mental breakdown as follows: "But the long years of controversy, the bitter disappointments he had suffered, the memory of the women he had

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seen die, first because he could not discover the cause of their dying, and later because others could not understand the simple principles he evolved to prevent their dying—all these things were burdens which would have broken down the barriers of a sanity greater than his. His ordinary tendency to moodiness became accentuated. There were days when he hardly spoke to his colleagues, lecturing in an almost unintelligible monotone to the students, and breaking out every now and then into a passionate harangue for no apparent reason."

Tormenting though Semmelweis' experiences must have been to him, were they enough to cause his insanity which brought him to the end of life in the lunatic asylum of Vienna? Several obstetricians before him had found the same preventive remedy for puerperal fever. In 1795 Alexander Gordon of Aberdeen recognizing the "epidemic" character of puerperal fever, recommended the burning of the bedclothes and apparel of infected persons and insisted on thorough washing of doctors' and nurses' hands and fumigation of their apparel. Robert Collins, chief of the famous Rotunda Hospital in Dublin, fought the raging childbed fever in 1829 by filling all the wards of Rotunda with nascent chlorine gas for 48 hours. Walls and floors were wiped with chloride of lime. Blankets and linen were exposed to dry heat in a stove at 120 to 130° F. He achieved a full success. In the United States it was Oliver Wendell Holmes who wrote an article on "The Contagiousness of Puerperal Fever" in 1843. He recognized the danger of transmission of the "miasma" by those physicians who had performed postmortem examinations before working in the delivery room and emphasized the importance of the preventive measures taken by Collins in Dublin. He brought upon himself a storm of abuse from American obstetricians and his observations were not accepted in his own country.

These men, too, must have been greatly disappointed and frustrated in their endeavors. Yet they did not break down. The unhealthy influence of politics in Austria upon the affairs of medical science and its vessel, the University of Vienna, did not stop after Semmelweis. Nor did the egotism and envy of some influential professors. And as to world stupidity, certainly it has its votaries still.

What, then, brought about the insanity of Semmelweis? How did his mental disease progress after 1864 when his strange personality changes had become obvious? He became increasingly restless and distracted, visited his private patients in Budapest only at night, and one day as a guest at the house of his friend Markusovszky, suddenly became abusive and thundered countless accusations at his faithful adherent. His less loyal friends watched the show with sarcastic smiles while Markusovszky patiently endured the attack in silence. At a faculty meeting in Budapest in 1865 the agendum was the selection of an assistant in the obstetrical department of Semmelweis. Semmelweis stood up and, instead of speaking about the candidates, he read from a piece of paper the whole oath which midwives had to recite when sworn in. Several similar episodes made it clear that Semmelweis was insane and needed psychiatric help.

Members of his family, upon conferring with Dr. Markusovszky and Dr. Hirschler, decided to transport the patient to Vienna and to place him under the care of the famous psychiatrist Dr. Riedel. In Vienna Semmelweis was met at the station by his old friend von Hebra, who took him first to his home, then suggested a visit to the new sanatorium, and they drove on. There the patient was engaged in a talk with the psychiatrist so that Hebra and Dr. Bathory, Semmelweis' assistant who accompanied his chief to Vienna, could depart unnoticed. Semmelweis tried to leave, saying that he had to see his patients. When he was forcibly restrained he struggled so violently that it took six attendants to put him into a straitjacket and then into a dark room. This happened in July 1865. Dr. Riedel did not permit Mrs. Semmelweis to see her husband and she had to return home heartbroken.

At the sanatorium an infected wound on one of Semmelweis' fingers was ascribed to an injury received in a gynecological operation, although one may surmise that it could have been incurred in the fight with the attendants. The wound became gangrenous, multiple abscesses developed and Semmelweis died on the 13th of August 1865, of pyemia, the disease that had killed thousands upon thousands of women and infants in the postpartum and neonatal period. His body was taken to the Pathological Institute of the University where two of Rokitansky's assistants performed an autopsy.

We shall see that the findings at autopsy supported a clinical diagnosis which we can make today but that could not have been made in 1865 because the nature of this disease was then unknown.

The behavior of Semmelweis in the last years and months cannot be attributed to simple depressions, to melancholy or to the persecution complex of a paranoiac. There is ample evidence of progressive deterioration of his intellect—that is, of dementia. We can hardly assume that arteriosclerotic disintegration of the brain could have brought about so rapid a breakdown of a man of 47 years. It must have been general paresis of the insane that had destroyed his mind. This conjecture is given some support in the facts that Semmelweis did not marry until the relatively advanced age of 38, and his first two children (the first of whom had hydrocephalus) died early.

A complete authentic copy of the autopsy report from the Pathological Institute of the University of Vienna has been published by the surgeon Schönbauer in his book *Das medizinische Wien.*

The clinical diagnosis was "Gehirnlähmung" (paralysis of the brain). The pathological-anatomic diagnosis summarized in Latin, as was customary in Vienna, may be translated as follows: "Hyperemia of the meninges and brain. Grey degeneration of the spinal cord. Gangrene of the middle finger of the right hand. Metastatic abscesses on the metacarpus of the left index finger and on the right lower extremity; furthermore on the left chest perforating through the third intercostal muscle into the costal pleura. Multiple abscesses in the left kidney. Putrid stench of all the large abscesses."

The death from pyemia is therefore obvious. It is unnecessary to quote the very detailed description of these findings. I quote only those passages of the long report pertaining to the condition of the central nervous system:

> The pupils were narrow, the dura adherent to the skull, the meninges hyperemic with serous infiltration along the dilated and tortuous blood vessels, partially adherent to the cerebral cortex. The frontal gyri were narrowed. The spinal cord was moist, its surface protruding from the cross-section and the posterior tracts showing greyish stripes, especially in the cervical region, up to the grey substance.

These findings are consistent with the clinical impression of general paralysis of the insane with tabes dorsalis. A microscopic examination of the brain was not done.

Full recognition of Semmelweis' brilliant work came but 14 years after his death. In a discussion on puerperal fever at the Académie des Sciences in Paris in 1879 a speaker elaborated on the causes of epidemics in lying-in hospitals. Louis Pasteur interrupted him: "None of those things cause the epidemic; it is the nursing and medical staff who carry the microbe from an infected woman to a healthy one." And when the speaker replied that he feared the microbe would never be found, Pasteur went to the blackboard and drew a diagram of the chain-like organism, saying, "There: This is what it looks like."

The fact that Semmelweis' mind succumbed to the consequences of an old infection with Spirochaeta pallida (discovered years later by Schaudinn, and still later in the brain by Noguchi) does not detract from the memorial honors due the man who first proved the nature and the way to successful prevention of puerperal fever.

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Allergic Reactions to "Kissing Bug" Bites

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• In addition to local allergic skin reactions to the bite of the kissing bug, *Triatoma protracta,* the systemic reactions can vary from a mild urticarial reaction to a severe anaphylactoid reaction consisting of shock, generalized angioneurotic edema and laryngeal edema. The diagnosis can be established by the clinical history, the finding of an engorged kissing bug, the presence of typical local and systemic signs, and finally, a positive reaction to a skin test with an extract of the bug.

ALLERGIC REACTIONS to the bite of the kissing bug (conenose bug), *Triatoma protracta,* have been encountered frequently by the senior author every year during the past decade in the Mariposa foothill area of the Sierra Nevada range. In recent years the number of such cases appears to be more frequent and there has been an increasing interest in this problem in this area and in Southern California on the part of physicians, entomologists and the general public. A recent review and survey[5] by the Bureau of Vector Control of the California State Health Department indicated that in Mariposa County alone there were at least 110 persons who in past years have had one or more allergic reactions to the bite of the kissing bug. Since some of the patients have had as many as 15 systemic allergic reactions in a season, one can appreciate that it is a real personal and public health problem and that certain persons have moved from the area to avoid the bite.

In the only extensive clinical report on kissing bug allergy, Shields and Walsh[4] summarized their experience with 45 patients seen in a dermatology practice. Our experience confirms theirs with respect to the painless nature of the bite, the uniform finding of an engorged bug, the rarity of bites in cold seasons and the various skin lesions that can be caused by the bites. They grouped the local reactions under four headings.

1. Papular lesions with central punctum.
2. Small vesicles in 2 to 3 cm. area.
3. Giant urticaria with brawny edema.
4. Unilateral hemorrhagic nodular to bulbous lesions on hands or feet resemblying erythema multiforme.

Shields and Walsh indicated that in one of their patients severe systemic reactions did occur. Other reports in the medical[1] and entomological[2,6] literature have also referred briefly to cases of systemic allergic reactions due to Triatoma and other members of the family Reduviidae.

In this brief clinical report we would like to emphasize and describe some of the variations in the systemic reactions observed and record our results of direct skin testing with a specially prepared extract of *Triatoma protracta.*

The clinical picture was a puzzling one when first observed many years ago, but it is now easily recognizable and almost predictable in its course. The following two cases illustrate some of the variations in the clinical manifestations.

CASE 1. A 14-year-old girl was awakened at 3 a.m. with general itching and a few hives scattered over her body. She felt slightly nauseated for a few minutes and after a few hours the itching and hives subsided. (In some milder cases, the patient is awakened by itching at only one spot on the leg or arm. In most cases an engorged kissing bug can be found in or around the bed covers, if careful search is made.)

CASE 2. A 45-year-old woman awakened at 5 a.m. and was aware of a severe itching over her entire body and especially over the left elbow. She was nauseated and in getting up and going to the bathroom, became very faint. She had to lie down, and vomited on the floor. She was pale and felt a tightness and constriction of the throat. There were some hives seen on her body. She lay on the floor and after a few minutes felt a little better, and was taken to the hospital emergency room. Results of physical examination at this time were within normal limits except for generalized urticaria and mild angioneurotic edema of the face. Immediate treatment consisted of giving 0.5 cc. 1:1,000 epinephrine subcutaneously and chlorpheniramine maleate 10 mg. parenterally. Epinephrine in oil, 1:500, was also injected and the patient was given prednisolone, 20 mg. daily for three days.

* * *

In a few cases we have found the patients to be in shock with a blood pressure of 40/0 mm. of mercury with all the physical findings consistent with shock. In general, the following complaints, listed in the order of frequency, have been noted: itching at the site; generalized itching; generalized hives; fainting, nausea and vomiting; swelling of the eyes;

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swelling of tongue and "throat" with difficulty in swallowing, speaking and breathing, etc. Physical findings are usually consistent with the complaints and include: urticaria, angioneurotic edema, immediate and delayed local reaction at site of bite, hypotension, edema of tongue and larynx.

SKIN TEST RESULTS

The allergic nature of these reactions suggested that one might expect to find skin hypersensitivity to the proteins of the Triatoma bug. Defatted and minced *Triatoma protracta** were extracted in 50 per cent glycerine-buffered saline solution in a proportion of one gram to 40 cc. of extracting fluid. After appropriate sterility and safety testing, this extract was tested by the scratch method on 12 known patients. Eleven of the patients had immediate positive cutaneous reactions consisting of a wheal from 5 to 20 mm. in size. The twelfth person was positive to an intradermal test of 0.05 cc. of a 1:1,000 dilution. In all cases control tests were performed with diluent and were negative. Cutaneous testing with the Triatoma extract in nonallergic persons gave negative results.

COMMENT

The bite of the Triatoma bug is judged to be the cause of these allergic reactions on the basis of the following observations:

1. Previous reports, published and unpublished, are consistent with our experience.
2. Direct observation of an allergic reaction following the bite in several cases.
3. Seasonal occurrence corresponding to kissing bug prevalence.
4. Finding of the engorged bug in or around bed of person reacting in 75 per cent of the cases.
5. Local reaction at site of the bite in 75 per cent of the cases.
6. Positive skin test reactions in the 12 patients tested.

For treatment we have used parenteral injection of epinephrine or corticosteroids and the administration of antihistamines. Because so many of the bites occurred during the night, oral administration at bedtime of delayed absorption forms of the antihistamines has been used in a number of patients. While such therapy seems to ameliorate the symptoms, it does not abolish the reactions to the bite, and therefore, is not too satisfactory. To minimize exposure to the bugs, a program of clearing of underbrush, rubbish and wood rat nests in the vicinity of the house has been helpful. In a few cases the patients have moved out of the foothill area to avoid the bite.

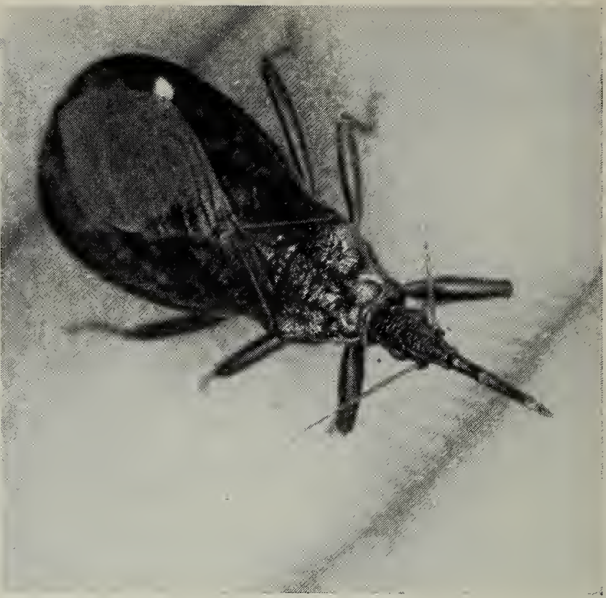

Figure 1.—*Triatoma protracta,* Kissing bug or Conenose bug, resting on technician's finger. (Courtesy of Bureau of Vector Control, Calif. State Department of Health.)

Because of the severity of the reactions in some patients we have started an investigation of the value of desensitization injections in the hypersensitive. In light of the objective nature of the reaction and the frequency of the bites, an objective evaluation of desensitization would appear to be quite feasible. Further studies on the immunological aspects of this hypersensitivity are also desirable. Passive transfer studies to demonstrate the humoral nature of the sensitizing factor would show more conclusively that we are dealing with the usual atopic type of reactivity. Perlman[3] recently called attention to the possibility of initial sensitization and cross-reaction between the box elder bug and the kissing bug.

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*The *Triatoma* were obtained through the courtesy of R. R. Ryckman, Ph.D., Department of Microbiology, Loma Linda University, Loma Linda, California, and the extract was prepared by Berkeley Biologicals, Berkeley, California.

Fracture of the Metacarpal Shaft

A Method of Treatment

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• Anatomically, metacarpal fractures, when reduced, are not spontaneously stable. They require maintenance of this reduction because of the forces acting on the fragments. Closed methods of maintaining this reduction are ideal, but in selected cases, intramedullary fixation of the fracture, using the Kirschner wire, gives excellent results. The method under consideration does not disturb the fracture site itself, the Kirschner wire being introduced "blind." Correct placement of the site of insertion of the wire, coupled with the rigid immobilization thus attained, gives excellent results in a high proportion of selected cases.

FRACTURES OF THE METACARPAL SHAFT, although commonly regarded as of little importance, are actually serious injuries, frequently resulting in crippling deformities with considerable permanent disability.[11] The disability is due to inadequate reduction and lack of maintenance of proper position. This in turn leads to malunion and contractures at the distal joints, extension at the metacarpophalangeal joint and flexion of the proximal interphalangeal joint.

From a review of the frequent poor results of treatment, and taking into account the functional anatomy of the hand it appears that inadequate control of the ray (digit plus metacarpal) permits the muscle-tendon systems of the hand to distort the fracture fragments. Characteristic deformity which results, causes the metacarpal shaft to bow dorsally, the metacarpal head dropping into the palm. The collateral ligaments, which are short in extension and tend to tighten up the metacarpophalangeal joint during immobilization, tend to limit flexion later. Hence it is important to reduce the fracture and maintain the collateral ligaments and intrinsic muscles in a relaxed state to prevent traction that would displace the fragments during healing. Long dependency of the injured member, overtight dressings and prolonged immobilization must be avoided lest edema, swelling and fibrosis complicate healing. Some of the methods of immobilization may aggravate or prolong stiffness.

For fracture without displacement, minimal splinting of the hand and parts of the digit is the method of choice.

Historically, early methods of treatment included simple bandaging over roller bandage, with or without reduction, and immobilization in extension with use of straight dorsal splints or banjo splints. These older methods are to be condemned. They are no longer used by orthopedic or hand surgeons.

Later, Watson-Jones advocated flexion of the metacarpal joint to 90°, using the base of the proximal phalanx as a lever to reduce the fracture and then keeping this joint at right angles to maintain the reduction. Immobilization in this manner may result in contractures which require prolonged and intensive physiotherapy to overcome. Still later, many observers advocated open reduction and intramedullary fixation, using wires, screws, plates or intramedullary devices.[2]

To evaluate various methods of treatment in a critical manner, certain criteria must be established for reduction and immobilization to provide maximum eventual success. Burnhams'[3] criteria seem admirably inclusive:

- The method must provide complete control of the fractured bone during reduction and healing.
- The hand must be placed so that the muscle-tendon systems are at minimal tension.
- Immobilization must be adequate to prevent distraction by the muscle-tendon systems.
- There must be post-reduction compression to avoid edema.
- If possible, the method should be closed rather than open (for obvious reasons).

In an effort to correct the anatomic and functional deformity of these fractures, and also to prevent the restriction of finger motion which follows, many orthopedic and hand surgeons use a modified Jahss maneuver and then apply a light sugar-tong plaster or a Boehler frame splint. In selected cases, however, especially where the patient's livelihood depends on precision use of the hands, Kirschner wire internal fixation has been found to obviate many complications and their attendant problems. It should be used primarily where standard closed reduction methods or minimal splinting would not be adequate or satisfactory. The advantages are

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early correction of the deformity of the fracture and rigid internal fixation of the fragments. It is a most effective way of preserving function[1] and during the healing period the patient is able to continue at almost all jobs except those in which the hands must get wet. Closed anatomic reduction is not difficult for one experienced in the technique, but maintaining reduction occasionally presents problems.

In my experience, reduction of fractures of metacarpal bones and maintaining this reduction by either skeletal traction or casting require extremely close supervision and the results are uncertain. Breakdown of the skin due to pressure volarward on the metacarpal head and dorsalward on the base of the middle phalanx often prevents the patient's working for a considerable time postoperatively.

Open reduction entails additional trauma to the fracture site, the hematoma, the adjacent soft tissues and often includes enough periosteal stripping to delay bony union. Open reduction is best reserved for the rare case of compound fracture or of soft tissue interposition.

The method recommended consists of closed reduction, using the Watson-Jones[11] method or direct manipulation of the fragments (Jahss' maneuver).

Once the closed reduction is made and is confirmed by palpation of the fracture line, the metacarpal interphalangeal joint of the involved ray is flexed to at least 90°. With a No. 11 Bard-Parker blade a tiny puncture wound is made on the radial side of the dorsal surface of the metacarpal head, avoiding the greater part of the extensor hood mechanism.[12] A Kirschner wire of suitable diameter (usually 0.054 inch) is inserted in a hand chuck with about ¾-inch of the pointed tip protruding. Using a gentle rotary motion, the wire is passed into the metacarpal head and into its medullary canal. The hand chuck is then loosened enough to expose about 2½ to 3 inches of wire, after which the wire is inserted, using hand chuck pressure until resistance is met. Roentgenograms taken at this time will show the reduction of the fracture and also the depth of the intramedullary wire. In fractures near the metacarpal base, the wire should extend into the adjacent carpal bone. This will also prevent the wire from migrating.

This principle does not apply to all fractures at the base of the thumb metacarpal, since these fractures are often associated with subluxation at the carpo-metacarpal joint—the so-called Bennett's fracture. Fractures of that order are treated by complete abduction of the metacarpal, using skeletal traction or, in some cases, Kirschner wire fixation. After satisfactory roentgenograms are obtained, the wire is cut off just beneath the skin to allow for easy removal after bony union has occurred. This procedure is best done in the surgical suite of a modern hospital. The choice between general anesthesia and local nerve block will vary with the surgeon. Even if general anesthesia is used, the patient may safely return home six to eight hours after operation if he has recovered from the effects of the anesthetic.

Immediately after operation the ray is immobilized in a simple aluminum volar curved splint which is worn for three to five days. After this, a simple dressing over the wound is sufficient. The patient may safely move the finger during this time. Three to four weeks after operation a local anesthetic agent is injected and the pin is removed.

The advantages of this method of "blind nailing" combine many features of both closed and open reduction. There is no extraneous damage at the fracture site and fixation is adequately rigid, which encourages early mobilization of the uninjured parts. The maximum stability of the injured parts promotes soft tissue healing. Most important, the postoperative care of the hand is minimized for both the surgeon and the patient, permitting earlier return to full use of the member without loss of the desired end result. Thus, the patient has minimum economic loss and maximum functional recovery.

It should be stressed, however, that since the Kirschner wire makes the fracture a compound one, this treatment is the method of choice only in selected cases.

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The Impaired Driver

A Critical Review of the Facts

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• Traffic accidents have been subject to relatively little scientific study in California. A substantial barrier to adequate basic research in this field has been the assumption that more is known about the underlying causes of accidents than actually is. For example, within the medical profession, there is a tendency to assume that physical impairments of drivers are important in the causation of accidents, although little evidence has been collected to confirm or deny this assumption.

Research into the underlying causes of accidents is a worthy but infinitely complex task. It must be accomplished before the driver's contribution to accidents can be seen in proper perspective, its components identified and dealt with on a rational basis.

From a scientific standpoint the "impaired" driver is a nebulous entity indeed. Presumably he is impaired for driving, but where are the specifications for various driving tasks against which to match the driver's capabilities? Where are study results to tell how to detect and measure those impairments which are significant in the causation of traffic accidents? Where does impairment in the driver end and impairment of the automobile and roadway begin? Are there ordinary driving tasks for which any driver might be impaired at some time? Why do we assume that impairment of the driver is the cause of most accidents when scientific study of the underlying causes of traffic accidents has barely begun?

Although meticulous scientific investigations of commercial passenger aircraft accidents are carried out as a matter of course, no such investigations of traffic accidents are conducted. For each death in an aircraft accident $498,400 is spent on safety research; for each traffic death, only $2.38.[22] Perhaps careful evaluation of commercial passenger air accidents is one reason that, in 1961, it was about six times safer to fly by scheduled airline than to travel the same distance by private automobile.[17] Only in the last few years has this kind of basic research into the underlying causes of traffic accidents been attempted.[14,18] The dearth of factual data available about the causes of traffic accidents and the contribution of the driver must be more widely recognized. A major barrier toward making more rapid progress in the control of traffic accidents has been the tendency to assume that we have this knowledge. All kinds of "shot-gun" therapy have been suggested and actually directed at the "impaired" driver without an adequate diagnosis of what constitutes significant impairments to driving.

IMPAIRMENTS

Based on the present state of knowledge, what can be said about driver impairments?

1. There are gross physical defects which obviously are not compatible with safe driving—blindness is the most obvious. These conditions are not commonly encountered in drivers.

2. There are conditions, often not obvious and frequently temporary, which can be just as incompatible with safe driving—taking alcohol or certain kinds of medicine, for example. These conditions are probably quite common.

3. There may be impairments of real significance which we have not yet identified.

4. A driver may have a variety of lesser impairments which do not interfere with safe driving and may have little or nothing to do with any accident he has. There may even be defects or conditions which are an advantage to driving or that stimulate a driver to become more skillful than he would have been otherwise.

5. The "impaired" pedestrian should not be overlooked. In a sense he is the other "driver" in a collision between him and the vehicle. Pedestrians comprise about 20 per cent of the fatally injured traffic victims in California.

6. There are two categories of drivers for which significant documented information is beginning to emerge—drivers intoxicated by alcohol, and youthful male drivers.

The young men drivers under 25, as a group, have the poorest driving record as measured by accidents and citations.[8,9] In scientific circles, there is criticism about condemning any group of drivers

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From the Bureau of Occupational Health, State of California Department of Public Health, Berkeley 4.

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TABLE 1.—*Estimated Resident Population and Estimated Drivers with Valid Licenses by Age and Sex, California, 1960*

	Estimated Resident Population (In Thousands)			Estimated Number of Drivers (In Thousands)			Drivers as Per Cent of Population		
Age Group	Both Sexes	Men	Women	Both Sexes	Men	Women	Both Sexes	Men	Women
All ages	15,831	7,848	7,983	7,952	4,885	3,067	......	......	......
15 and over	11,079	5,423	5,656	7,950	4,883	3,067	71.8	90.0	54.2
Under 15	4,752	2,425	2,327	2	2	......	......*	0.1	......
15-24	2,368	1,227	1,141	1,155	711	444	48.8	57.9	38.9
25-34	2,256	1,117	1,139	1,950	1,150†	800	86.4	99.0†	70.2
35-44	2,238	1,105	1,133	1,976	1,163†	813	88.3	99.0†	71.8
45-54	1,736	856	880	1,447	894†	553	83.4	99.0†	62.8
55-64	1,231	580	651	889	584†	305	72.2	99.0†	46.8
65 and over	1,250	538	712	533	381	152	42.6	70.8	21.3

*Less than 0.1 per cent.

†Because of duplication of operators and chauffeurs licenses, sampling errors, and the fact that some holders of valid licenses may have left the State, this figure may be too high.

Source: State of California, Department of Finance, population estimates prepared July, 1959. State of California, Department of Motor Vehicles, *Driver Record Study, 1958,* and communication giving number of outstanding valid licenses, 1960.

without better data on the quantity of their driving. Maybe the accident and citation experience of the young male driver can be explained by his driving more than others. Only if all drivers did the same kind, and the same number of miles of driving, and at the same hours, would they approach similarity in risk of accidents and citations. In its study of negligent operators,[8] the California State Department of Motor Vehicles found that 96.5 per cent of such operators were men; and compared with other drivers they were much younger, drove much more, and included a disproportionate number of commercial drivers. However, the annual mileage of negligent operators under 25 was lower than that of other age groups of negligent operators, but still some 500 to 600 miles per year more than for the average male driver not classified as negligent.

This partial evidence of some increased risk can account only for a small proportion of the poor experience of the young driver. This group offers a fertile field for research into the causation of their accidents. We already know that whatever the significant factors are in the causation of accidents in this group, they do not persist, to the same degree at least, as these drivers (who survive) become older. Another fact is well established. This group of men, 15 to 25 years old, have a lower rate of physical impairments or disabling conditions than other men.[20] In other words, the group of men in best shape physically have the poorest driving experience, and the leading cause of death and injury among them is traffic accidents.

Most expert opinion holds that the intoxicated driver and the intoxicated pedestrian make a sizable contribution to traffic accidents. The research which comes nearest to a scientific confirmation of this opinion comes from New York.[12,13,16] The New York studies revealed a high proportion of significant blood alcohol levels among dead drivers responsible for their accidents—much higher than was ever suspected (of the 73 per cent who had been drinking, 46 per cent had blood alcohol levels of over 250 mg per 100 cc, compared with uninvolved drivers (controls) of whom 26 per cent had been drinking and none had blood alcohol more than 250 mg per 100 cc[16]). Certainly there is a great need for study and documentation of the extent and characteristics of the drinking driver and drinking pedestrian problem in California. This task is technically difficult and expensive, even in a state like New York which has an "implied consent" law.* As California does not have (although it needs) such a law, the legal barrier to obtaining the necessary data and proper controls is formidable. Only for persons who die of traffic accidents can descriptive data about alcoholic intoxication be collected, and then only where the coroner is willing and has facilities to have alcohol tests performed.

It is interesting to note that the same two factors, age and alcohol, are emerging as significant impairments of both drivers and pedestrians. However, the age factor for adult pedestrians is on the other end of the spectrum—*old* age rather than youth.[13]

DRIVERS

What can be said about the general characteristics of California's vehicle operators? In California, there are more than eight million drivers; about 61 per cent of them are men. About 72 per cent of the driving-age population have valid operators' licenses. Of men between 25 and 64, about 99 per cent have valid operators' licenses (Table 1). Men drive almost twice the annual mileage that women drivers do, according to one sampling survey of California drivers.[8] It can be estimated roughly that men account for three-fourths of the miles of driving in California, and women only one-fourth. It is suspected, but not confirmed, that the mileage driven by women may not be equivalent and is probably less, in risk, than is the mileage driven by men. It rarely includes long hours of commercial driving, for example. However, assuming that the risk per mile is equivalent, women drivers would have to be responsible for over one-fourth of the accidents and citations before it could be said that they are not as safe drivers as men. In one California study, women accounted for about one-fifth of the accidents and about one-sixth of the citations.[9] These data come close to answering the age-old question about the relative safety of men and women drivers. If the risk per mile for men is greater, then women are about equally safe drivers. If the risk per mile is equal, then women are safer drivers.

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*An "implied consent" law stipulates that a person operating a motor vehicle upon the public highways consents to tests to determine the alcohol content of his blood or breath whenever a law enforcement officer has good reason to request it. In California drivers may refuse such tests, thereby evading the best scientific evidence to establish the facts when the charge is driving while in an intoxicated condition.

HEALTH STATUS

What can be said about the health status of California drivers? A number of studies and reports can be cited[5,6,7,10,11,15,21] on which to base estimates of various physical, social, and mental conditions existing among California's driving age population (over 15 years). Some examples are listed in Table 2. It is not known to what degree, if any, these conditions in drivers contribute to accidents.

TABLE 2.—*Estimates of Incidence (in Californians of Driving Age) of Physical, Social and Mental Conditions that Might Contribute to Automobile Accidents*

1,700,000	*Physical disabilities** (includes hearing, vision, orthopedic and speech impairments).[21]
	Includes:
	420,000 impaired hearing (2/5 over 65 years)[21]
	7,000 totally deaf[21]
	210,000 impaired vision[21]
	24,000 totally blind[11] (most are over 65 years)
	410,000 orthopedic handicaps (limbs, trunk, or back impaired)[21]
	22,000 absence of major extremities[21]
700,000	*Estimated number of problem drinkers.* Five out of eight are men. (100,000 of these are advanced alcoholics with serious physical complications.)[10]
160,000	*Estimated number with history of admission to a State mental hospital* for mental illness during past ten years including resident population of State mental hospitals.[7]
100,000	*Estimated number of mentally defective* (10 per cent are in State hospitals; remainder mostly in general population).[7]
100,000	*Estimated number with known heart disease* (½ in persons over 65 years; 60 per cent in men).[11]
80,000	*Estimated number of known diabetics* (60 per cent women).[11]
40,000	*Estimated minimum number with epilepsy.*[15]
20,000	*Estimated number of persons discharged from State prisons* during last four years or now on parole (95 per cent are men).[5]
12,000	*Estimated number of narcotic addicts* (80 per cent male).[6]
2,900,000	*Total conditions listed.*†

*This number represents conditions, not people, since one person can have several of the conditions listed.

†This number represents conditions, not people, since one person can have several of the conditions listed. It is not known how many of the above conditions are represented by licensed vehicle operators or what effect the conditions may have on ability to drive safely. However, it is not unlikely that 75 to 95 per cent of these conditions occur in licensed drivers. All but one of the conditions occur more often in men and 90 per cent of men are licensed (99 per cent between 25 and 65 years).

A highly controversial subject is whether or not a medical examination should be carried out as a condition of issuing a driver's license. This procedure is in effect in Pennsylvania. The rejection rate for Pennsylvania drivers averages 14 for each 10,000 medical examinations, with the rate for the older drivers being about ten times that of the younger ones. If one includes the several hundred Pennsylvania applicants who probably refused examination because they feared rejection, the rate could go only to a maximum of 19 rejects per 10,000 applicants.[19] Pennsylvania may have a higher rejection rate than California would have, for in Pennsylvania renewal of drivers' licenses by mail had been allowed. In California, drivers are subject to scrutiny in person by the staff of the Department of Motor Vehicles each time a driver's license is renewed. Probably this practice has already kept many who have obvious deficiencies from making application. Nevertheless, if Pennsylvania's experience were applied to California, there would be about 11,000 rejected among the over eight million drivers. In California, in 1960, there were some 77,000 drivers killed or injured in traffic and about 240,000 drivers of sufficiently poor experience to be classified as negligent. With about 300,000 drivers in trouble, one can see that the ordinary physical examination, which would select out only 11,000 drivers, is not a very efficient or sensitive test for detecting the kind of driving impairments which contribute significantly to accidents. Either medical problems are not a major contributor or there are significant medical impairments not subject to detection during routine physical examination. There is no doubt that the driver with physical impairments detectable on medical examination and which obviously impair driving should not be licensed; however, there must be easier and less expensive methods of reaching one of them than by carrying out over 700 physical examinations. Medical examinations for all California driver license applicants, new and renewal, would call for about 12,000 to 15,000 examinations every work day, or about two a day for each physician in general practice.[4]

There may be very good reasons for subjecting the adult population to regular medical examinations but the procedure can hardly be justified on a scientific basis as a panacea for traffic accident prevention. Before embarking on such extensive "shot-gun" therapy for all drivers it would be well to study first the relationship between traffic accidents and the medical characteristics of the drivers at fault. With this information, medical standards and medical examination techniques could be devised and focused upon whatever drivers and whatever medical conditions actually contribute to accidents. Barriers to such a study are the lack of practical and precise methods of measuring the tremendous variety of impairments of potential significance, and the lack of specifications for the driving task.[2]

Medical standards for drivers have been published and should be very useful to physicians advising their patients.[1,3] However, the authors of standards are careful to point out that their standards are based on expert opinion. These standards could be tested in the framework of a special study wherein a group of drivers are first examined medically and their driving experience followed to see to what degree the standards used are effective in selecting poor risks, and if the selection has been accomplished as efficiently as it would be by other methods.

In principle, drivers should be evaluated at intervals for their skill and fitness. However, there is a great deal of work and study ahead before the machinery to accomplish this objective can be established on a basis sufficiently sound to apply to all drivers. In the meantime, it would seem reasonable that individual drivers selected for one reason or another as poor risks should be examined medically. Indeed, this is often done in California. Special risk drivers, such as commercial and passenger vehicle drivers, are required to be examined periodically. Unfortunately, few studies have been carried out to determine the value of these examinations, the kind and extent of examination which is most profitable or the qualifications necessary for the examiner.

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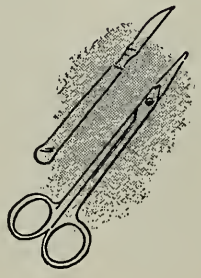

Medical Handicaps to Driving

The Physician's Dilemma in Evaluation

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• The physician who examines a patient for impairment to driving must consider the welfare of the community which will be exposed to the patient's driving in addition to the welfare of the patient himself. The medical opinion on physical and mental fitness to drive should be based upon consideration of:

1. Extent and nature of driving exposure.

2. Relation of organ system involved to medical requirements of the driving task.

3. Duration of condition and nature of adaptability.

4. Predicted speed of onset of medical crisis.

5. Evaluation of the patient and his environment as a totality.

An informed medical society traffic safety committee can be of great assistance to the practicing physician and to the Department of Motor Vehicles in evaluating medical hazards in driving in special cases. Most regulations concerning impairment to driving are currently based upon consensus of expert opinion since statistically valid data are not yet available.

THE YEAR 1899 marked the beginning of a grim race in which the physician has become an important if at times unwilling participant. In that fateful year, the first of a long succession of Americans was killed in an automobile accident. By 1951, a million Americans had died of this cause. We continue to add to this toll at the rate of 40,000 deaths a year, 4,100 of which occur in California. An additional 1,500,000 persons in the United States are injured yearly in such automotive mishaps.

Closely paralleling the automobile accident problem both in time and complexity has been the legal role of the physician with regard to responsibility to community and to patient. Since 1901, physicians have been subject to licensure in California. Licensing imposes some very direct legal responsibilities upon the licensee. Certain diseases must be reported. At times the welfare of the community must precede certain aspects of patient welfare. In addition, the legal responsibilities of many agencies are directly transferred to the physician when he certifies that a patient does or does not meet physical and mental criteria for critical employment, the qualifications for which are defined by legislation or regulation.

The operation of a motor vehicle under a variety of personal and commercial circumstances affords an excellent example of these direct legal responsibilities of the physician, such as the requirement to report patients who have lapses of consciousness, and of the indirect legal responsibilities assumed in certifying medical fitness to drive, or in not informing the "impaired" driver, or one who may be taking a medicine, of the possible increased hazards of operating a motor vehicle. It brings into focus the dilemma of his role as a guardian of the health and welfare of the community on those occasions when it appears to come in conflict with his role as a guardian of the welfare of the individual patient.

In one instance not many years ago, a physician certified a patient as medically qualified to regularly drive a double tanker truck loaded with gasoline through congested portions of Los Angeles. The patient was in good health—with the exception of a rather large aneurysm of the abdominal aorta. The physician reasoned that, with certain restrictions of weight lifting, this occupation would not be seriously detrimental to the patient's condition. One must shudder, however, on considering whether this patient's condition was detrimental to the public who reside in Los Angeles and would regularly be exposed to several thousand gallons of highly flammable fuel being guided through town on a prayer and borrowed time.

Despite over sixty years of experience with driving and motor vehicles, we have nothing more than the grossest of knowledge as to what are the components of the driving task. We likewise know little about what actually constitutes an impairment to driving and under what conditions of driving impairment exists. Nevertheless, we do know that the task of guiding and propelling a motor vehicle can represent

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a hazard both to the performer of the task and to those exposed to him. We also have reasonable, although by no means complete, knowledge of certain medical disorders which are likely to make driving more hazardous. In situations like that of the driver with the aortic aneurysm, the physician need know nothing about the actual driving task other than the fact that the driver is engaged in transporting hazardous substances. He must then ask, "Is this occupation dangerous to the patient?" and, "Would this patient's activity be dangerous to the public?"

A somewhat more difficult case is that of the woman whose car ran off the road on several occasions. Examination by her family physician did not elicit any impairment which could be related to her driving. Here the problem was twofold. An adequate knowledge of the driving task was not available. Nor was there an accurate diagnosis of the patient's handicap. However, in the absence of these, the incompatibility of the patient's condition with the job of operating a motor vehicle was felt to be sufficiently established by her accident experience. Therefore, a medical advisory committee to the Department of Motor Vehicles recommended that she should not be permitted to drive.

In the decision concerning medical fitness for driving, the physician is frequently forced to take definitive action without having access to definitive knowledge. While to date we have obtained some minimal statistics about the numbers of accidents in which drivers who have ingested alcohol or who have diabetes or some other condition are involved, we cannot relate these data to the amount and type of driving exposure which people with these conditions experience yearly as compared with "normal" drivers. Such knowledge has been exceedingly hard to obtain because it depends upon the accumulation of mass data and upon adequate reporting of certain information which is not readily offered. Data like this can only be collected through community planning for this information involving the Department of Motor Vehicles, medical societies and public health personnel. A study of this nature is currently being conducted by the Connecticut State Health Department and the Department of Motor Vehicles of that state, in cooperation with the U. S. Public Health Service. In addition, driving simulators are being developed to experimentally determine components of the driving task and conditions which actually limit performance of the task.

We do know what appears to be common sense in regulating the driving of people who seem to have an impairment to operating a motor vehicle. This common sense is usually based upon interpolation from other everyday activities and upon evaluation of individual accident cases which may or may not be representative of the majority of vehicular collisions. Collected expert opinion is available in written guidelines,[1,3] and in the traffic safety committees of some county medical societies* for answering the question of driving ability in a given case. It must be emphasized that this decision can never—and should never—be applied through mass formula but rather through the careful consideration of the individual and his environment, as is the case in all other aspects of the application of medical knowledge.

As with so many other activities, the task becomes easier the more it is practiced. The county medical society, which develops a traffic safety committee working closely with both its own members and the Department of Motor Vehicles, will find that its members develop a keener understanding of the safety needs of the community as applied through the motor vehicle laws, and will assist the Department of Motor Vehicles in its consideration of the needs of the individual whose fitness to drive is under question. Because such a committee is not a law enforcement agency with responsibilities which are primarily community oriented, and is not directly exposed to the specific physician-patient relationship, its members are capable of maintaining a degree of objectivity in weighing patient needs against community needs. It must be remembered that, while limitation on his driving may burden the immediate welfare of the patient, ultimately this regulation of activity works in the best interest of the patient and his family, since it lessens what otherwise might be a reasonably sure chance of personal destruction.

Based upon expert opinion, several thoughtfully prepared guidelines have been developed for the evaluation of the presence or absence of impairment to driving.[1,3] These guidelines are usually in the form of checklists of medical conditions which warrant further scrutiny. In the following paragraphs we will present a somewhat different approach to the evaluation which will serve to supplement already existing lists of potentially hazardous conditions. The items discussed below seek to relate medical conditions more closely to the driving task.

Extent and Nature of Driving Exposure

In order for a collision to occur, the proper combination of environmental, vehicular and driver factors must take place. The more frequently these factors are placed in proximity, the greater the likelihood of an accident. In considering the effect of an impairment upon the potential driver, therefore, the physician must look at the extent and nature of his exposure to the roadway. As a rule of thumb, based upon a small survey of California drivers by the Department of Motor Vehicles, the female driver averages 5,000 miles of driving a year, the non-commercial male driver does 10,000 miles a year, and the commercial driver covers 30,000 miles yearly. While the low-mileage driver is likely to drive for only a brief span of time when he gets behind the wheel, the high-mileage driver is more apt to operate a vehicle for several hours consecutively. Thus, any handicap he may have is accentuated by fatigue and monotony. The commercial driver not only has long stretches of driving activity, but is more likely to be driving a larger size vehicle. In such a vehicle he is exposed to the usual mechanisms of fatigue as well as to continuous high noise levels, frequently exceeding 100 decibels in volume within the truck cab. The physician who certifies a female driver and a commercial male driver with similar handicaps as medically capable of operating a motor vehicle, may be exposing the community to at least a six times greater risk in the case of the commercial driver on the basis of miles driven and ignoring the factors of fatigue, vehicle size, and vehicle contents which may further increase the risk to the community many fold.

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*Traffic Safety Committees have been formed by San Francisco, Kern, Sacramento, Los Angeles, Santa Clara and Alameda-Contra Costa Medical societies.

Relation of Organ System Involved to Medical Requirements of the Driving Task

An attempt to define the physical and mental requirements of the driving task would include consideration of such factors as vision, ability to concentrate, maturity of judgment, speed, coordination and a certain minimum of strength, range of motion and stamina. The exact interrelationship is, of course, not at present understood. There is sufficient information, however, to indicate organ systems which will require careful evaluation—the eyes, central nervous system, psyche, musculo-skeletal system, and any other system which is likely to impinge upon cerebral function.

As examples, the physician would be loath to recommend driving for the person with muscle spasticity because of advanced parkinsonism, or for someone with poor stamina because of myasthenia gravis, or dyspnea at rest. Likewise, a person with irrational behavior, immature judgment or sufficient pain to reduce his concentration on the driving task conceivably may be a poor driving risk. Sources of pain may include such diverse conditions as angina, back trouble, hemorrhoids and bursitis. It should be remembered that the ability to drive frequently must extend over a wide variety of circumstances including prolonged driving, poor illumination, complicated intersections and rapidly developing traffic emergencies.

Duration of Condition and Nature of Adaptability

Among the unknowns in our present knowledge of motor vehicle operation is the relative degree of handicap entailed in a defect of long duration, such as an amputation, as compared with a defect of limited duration, as when taking a course of medication. Argument can certainly be made for the ability to adapt to certain long-term conditions so that they are not in fact handicaps, although they may on the surface appear to contraindicate operating a motor vehicle. Of course, some defects, such as blindness, are totally incompatible with the driving task. The ultimate test—actual driving experience—may be too difficult or dangerous to attempt, and assessment of ability to drive safely in many cases will depend on an evaluation of the individual and his adaptation to other activities involving the organ systems listed above.

Gradual adaptation to long-term defects may be facilitated by the slow onset of the disease process or by rehabilitative assistance from medical personnel in cases of both rapid and slow onset. The person with a temporary defect, on the other hand, frequently may not even be aware of the increased hazard and the need to adjust his usual pattern of living or driving. This is especially true where the temporary disability is caused by medication whose effects may be only vaguely understood, if at all, by the patient. Only the physician in this case is in a position to make the patient aware of the possible increased hazard based on a knowledge of individual reaction to a drug.

The question of physician liability in the event of an automotive accident has been raised in Pennsylvania where medical examination of all drivers is required. The legal counsel to the American Medical Association states that "a physician who negligently conducts the examination in question or completes the report in a negligent manner, *may possibly* be held civilly liable for all damages flowing from such negligent acts, such as injuries caused to third persons in a collision because of the physical or mental disability of examined applicant. . . . However, before the physician can be held liable it must also be shown that his negligent act was the *proximate* cause of any resulting damages . . . [and] the consequences of his negligence must not be interrupted by any intervening negligence or cause on the part of any other person or persons. . . . Finally . . . it would be necessary to show that the damages resulting from his negligent act were foreseeable."[2] In cases involving consultation between the Department of Motor Vehicles and the physician, the actual decision of ability to drive is made by the Department of Motor Vehicles, and not by the physician. However, with the growing awareness of the possible hazards of driving under the effects of certain medication, it is not inconceivable that the responsibility of the physician to inform his patient of this possible medicinal side effect will eventually come to legal test. Such court tests have been an all too common trend, especially in California.

Predicted Speed of Onset of Crises

The need for considering medical conditions which may result in rapidly developing crises has already been recognized in the law which requires reporting of all cases of epilepsy to the State Department of Public Health. The definition of epilepsy in this legislation is "any condition which brings about momentary lapses of consciousness and which may become chronic." The occurrence of such rapidly developing clouding of the sensorium can be assumed on the basis of common sense to increase the hazard of driving. Similarly, the individual who stands a reasonable chance of developing angina, pulmonary edema or other suddenly and rapidly occurring episodes of pain, or physical or mental incapacity may be exposing himself and the community to an increased risk of disaster if he attempts to drive.

Evaluation of the Patient and His Environment As a Totality

Despite all that has been outlined above, the ultimate evaluation of medical fitness to drive depends upon a thorough understanding of the patient, of his pattern of reacting to his environment, and of his probable ability to control the vehicular environment under stressful as well as usual driving conditions. The physician must know his patient well enough to be in a position to evaluate such factors as reliability, sense of responsibility toward the community and intelligence level. This cannot be done on the basis of thumping once on the chest and filling out a form. Unfortunately, this appears to be the pattern in some areas in which routine medical examination for drivers is required. That it does become the pattern is a strong argument against compulsory examination. A much sounder system exists in the joint evaluation of questionable cases by the patient's private physician, the Department of Motor Vehicles and an understanding and informed advisory committee of medical experts from the local medical society. Such a system is already in effect in certain areas of the state and could be extended to cover all of California.

Other Physician Responsibilities

While the present communication has emphasized the physician's responsibility to consider community as well as patient needs, a word should be said about his role in offering the patient very personal advice. The automobile seat belt and safety harness by now have been amply proven capable of reducing severe and fatal automotive trauma. Yet a recent report indicates that, because of limited usage, we are currently saving only 70 of a possible 5,000 lives anually which could be prolonged if restraining devices were universally applied.[4] With accidents as the Number One cause of death under age 38 in California, and with motor vehicles leading the list of accidental killers, the role of the physician in promoting seat belts as well as in giving other advice for health and safety is obvious. Such advice needs reinforcement from many quarters, and the physician's individual and collective voice should be heard in the confines of his office and in support of community campaigns for seat belts.

Our responsibility does not end with advice to others on the use of safety devices. The physician who does not provide seat belts for himself, his family and his staff has neglected one of the most powerful tools at his command, in addition to exposing one of the community's most valuable health assets to needless risk. It is hoped that every physician who reads this article and who recommends seat belts can in all honesty say, "I use them myself for *all* driving."

State Department of Public Health, 2151 Berkeley Way, Berkeley 4 (Waller).

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CASE REPORTS

Severe Hypoglycemic Reaction With Chlorpropamide in Therapeutic Dosage

EUGENE B. LEVIN, *M.D.*, Los Angeles

CHLORPROPAMIDE (DIABINESE®), a sulfonurea compound, was introduced for clinical use in 1958.[2] It was reported safe and useful as an oral hypoglycemic agent. Symptoms of hypoglycemia have been noted often in association with doses of more than 1 gm. per day but rarely with doses in the therapeutic range.[1-7] The following case is an unusual example of the latter.

REPORT OF A CASE

A 53-year-old man was admitted to the hospital in a comatose condition. For eight and a half months before the present illness he had been taking 500 mg. of chlorpropamide daily. Two days before entering the hospital the patient had become lethargic and a dry hacking cough developed. He lost his appetite and seemed to his family to be mentally disoriented. Chlorpropamide was discontinued but his condition became progressively worse. The family history was negative for diabetes. In an insurance examination when the patient was 35 years old, glycosuria had been noted. Blood sugar content and results of glucose tolerance tests at that time were within normal limits. Three years before the present illness, laminectomy was done for lumbar discogenic disease. Two or three months later vascular occlusion in the right lower extremity developed and thromboendarterectomy of the right femoral artery and bilateral sympathectomy were carried out. During the stay in hospital blood sugar as determined on two occasions was within normal limits but several urine specimens were positive for sugar. Two months later a second operation was done to relieve recurrent thrombosis in the right femoral artery. At that time both glycosuria and hyperglycemia were noted and a glucose tolerance test was performed. The results were as follows: Fasting level, 129 mg. per 100 cc. of blood; at ½ hour, 241 mg.; 1 hour, 278 mg.; 2 hours, 286 mg. After the operation a 1,500 calorie diabetic diet and chlorpropamide, 500 mg. daily, were prescribed. This regimen was continued for eight and a half months until the time of present illness.

Upon physical examination the patient was observed to be comatose. He made irrational movements in bed, did not respond to questioning and was unaware of his surroundings. The blood pressure was 130/80 mm. of mercury, the pulse rate 72 and respirations 30 per minute. The skin was dry and warm. No abnormalities were noted on funduscopic examination and the pupils were round, regular, equal in size and reacted to light and accommodation. Except for the comatose state, no neurologic abnormalities were observed.

Blood cell counts were within normal limits. Blood urea nitrogen was 11 mg. per 100 cc. and creatinine content was 0.5 mg. per 100 cc. Blood sugar on admission was 30 mg. per 100 cc.; on the second hospital day, 72 mg.; on the third day, 81 mg.

Shortly after admission, intravenous infusion of 5 per cent glucose in water was started. At the same time, 50 cc. of 50 per cent glucose was injected intravenously and the patient promptly became conscious, responded sensibly to questioning and stopped the purposeless movements. Over the next 24 hours 2,000 cc. of 5 per cent glucose was infused and the patient felt quite lethargic, sleeping a good deal of the time. On the second hospital day he was more alert and on the third day he said that he felt "like my old self again." The patient was discharged without prescription of any drug or of specified diet, and there was thereafter no evidence of hyperglycemia. On examination several times afterward it was noted that late in the afternoon when the blood sugar was within normal limits, there was occasionally a 1 plus to 2 plus reaction for sugar in the urine.

DISCUSSION

Hypoglycemic reactions are reported to occur in about 4 per cent of diabetic patients treated with chlorpropamide.[2] Walker and Kinsell[7] expressed belief that this is a manifestation of overdosage rather than a side effect. In most instances it occurred in association with a dose of more than 500 mg. a day.

In the present case there was no untoward reaction for eight and a half months with the dose at 500 mg. a day; then, for no clear reason, without apparent preceding change in the patient's clinical condition, hypoglycemic coma developed. The pa-

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From the Department of Medicine, Cedars of Lebanon Hospital, Los Angeles 29.

Submitted August 30, 1962.

tient responded immediately to the administration of glucose but did not regain full equilibrium for several days. In this connection it is noteworthy that the half-life of a single dose of radioactive chlorpropamide is 32 to 36 hours.[1,3] Therefore, unlike insulin reactions, which are quickly counteracted, hypoglycemia reaction to chlorpropamide is longer sustained, hence prolonged care is often necessary.

In only one reported case was there residual brain damage after hypoglycemic coma in a patient taking chlorpropamide. Most patients readily recovered with use of intravenous glucose and thereafter took smaller doses of chlorpropamide without further trouble.

Recent evaluations of clinical experiences by Tolstoi,[6] Beaser,[1] and Walker and Kinsell[7] elicited 33 cases of hypoglycemic reactions in patients receiving daily doses of 500 mg. or less.

SUMMARY

Hypoglycemic coma developed, without clear reason, in a diabetic person who had been taking chlorpropamide (Diabinese®) in daily doses of 500 mg. for eight and a half months. He recovered after administration of glucose by vein and thereafter did well without taking the drug.

5916 West Olympic Boulevard, Los Angeles 36.

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Massive Fatal Bleeding from Colonic Diverticulitis

A. L. EDGAR, *M.D.*, La Mesa

UNTIL 15 YEARS AGO, bleeding from diverticular disease of the colon was considered to be uncommon, if not rare, and in the standard texts of yesteryear it is not usually listed as a cause of gross intestinal hemorrhage. In recent years, however, several reports of massive bleeding from this source have been published[1-6] and nowadays the possibility is given more attention in differential diagnosis.

The case described herein is that of a 77-year-old woman in whom massive fatal hemorrhage from a colonic diverticulum developed.

REPORT OF A CASE

The patient, a woman 77 years of age, was admitted to the hospital the evening of March 20, 1962, shortly after she had passed two large tarry stools. She gave no history of previous gastrointestinal disease, and questioning of her husband and daughter likewise elicited no history of tarry stools or other evidence of bleeding. The patient had been digitalized in January, 1962, because of increasing dyspnea, but had continued doing all her own housework and had remained quite active. Her blood pressure before the present illness had been 205/110 mm of mercury and an electrocardiogram was consistent with left ventricular hypertrophy and ischemia.

At the time of admission, the general condition of the patient seemed satisfactory. Hemoglobin content was 12.6 gm per 100 cc of blood and the hematocrit was 38 per cent. The prothrombin time was 15 seconds, or 95 per cent of normal; blood urea nitrogen was 25 mg per 100 cc and results of routine urinalysis were within normal limits except for a trace of albumin. About 3:00 a.m. the night of admission, the patient passed a large amount of fresh red blood rectally and the hematocrit was found to have dropped to 29 per cent and the hemoglobin content of the blood to 9.5 gm per 100 cc. Transfusions were begun and by morning the patient's condition seemed relatively favorable. However, about noon the day following admission, rectal bleeding became profuse, the loss amounting to approximately 1100 cc. Transfusions and general supportive measures were continued in the hope of sustaining the patient through the bleeding episode or possibly getting her ready for surgical exploration. However, at 6:00 p.m. the patient had a sudden convulsive episode, diagnosed as cardiac arrest. External cardiac massage was begun and, after the electrocardiogram showed ventricular fibrillation, external defibrillation was performed, resulting in a slow idioventricular rhythm which gradually failed despite external massage and intracardiac epinephrine. The patient died at 6:30 p.m. the day following admission. Further massive rectal bleeding had occurred during the terminal episode.

At postmortem examination, the pertinent findings were as follows: Innumerable colonic diverticula were present throughout the colon and the entire

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Submitted November 5, 1962.

colon was filled with blood. About 12 inches distal to the cecum in the ascending colon there was a fibrotic hemorrhagic tumor mass that was filled with large masses of clotted and fluid blood. On section of the mass, a diverticulum with acute inflammation and bleeding was noted. Microscopic examination confirmed the gross observations, and sections through the hemorrhagic mass showed ulceration of the mucosa of the diverticulum with severe, acute and chronic inflammatory changes extending through the entire thickness of the intestinal wall. Several blood vessels were seen at the base of the ulceration.

DISCUSSION

Burns[1] reported gross rectal bleeding in 42 of 118 cases of diverticular disease and pointed out that other lesions are often found at operation. In the series he reported, there were nine polyps and seven adenocarcinomas. He observed that in elderly persons gross hemorrhage may be the first sign of diverticular disease and that usually it can be abated with conservative management. In the series he reported, operation was not necessary in any case for the sole purpose of stopping bleeding.

Quinn described[5] a series of 49 patients treated in a 15-year period, all of whom had massive bleeding. All were treated with rest, sedation and transfusions. Five were operated on because of uncontrollable bleeding. Three who were not operated on died from massive bleeding.

The pathological findings in the case here reported emphasize the difficulty that a surgeon would have had in localizing the exact site of bleeding had the patient been in condition for exploration. In light of the known occurrence of associated lesions in many of these cases, careful study of the bowel before operation and examination of the entire colon at the time of operation are mandatory. One investigator said that if no bleeding is located at operation, subtotal colectomy—the cecum and entire colon to the rectosigmoid—may be indicated.[4]

SUMMARY

A case of extensive colonic diverticulosis and diverticulitis with massive fatal hemorrhage is reported. The circumstances emphasized the need for considering diverticulitis as a cause of gross bleeding and the difficulties that may be encountered in treatment.

La Mesa Internal Medicine Group, 5111 Garfield Drive, La Mesa.

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Termination of Ventricular Tachycardia By External Countershock

HERMAN N. UHLEY, *M.D.*, and
DONALD E. BERNSTEIN, *M.D.*, San Francisco

IN THE PAST YEAR, cardiac arrhythmias of ventricular and supraventricular origin resistant to intensive drug therapy have been successfully treated by external electric countershock.[1,3,6] A physician confronted with the problem of treating a patient with such an arrhythmia may, however, be reluctant to employ this therapy because of unfamiliarity and because of the paucity of reported cases so treated. Therefore, it is the purpose of this paper to report another case of persistent ventricular tachycardia, refractory to drugs, treated successfully by external electric countershock.

A 62-year-old man was admitted to Mount Zion Hospital and Medical Center for the treatment of uncomplicated acute myocardial infarction. On the morning of the tenth hospital day, he experienced crushing pain in the chest, and shock ensued. An electrocardiogram revealed ventricular tachycardia at a rate of 160 beats a minute. Pressor agents and antiarrhythmic drugs were given. At the end of the first day, the patient had received 1.4 gm of quinidine and 0.5 gm of procainamide. On the second day of the arrhythmia, he was given 2.4 gm of quinidine and it was necessary to substitute norepinephrine for metaraminol to maintain the blood pressure. On the third day, 1.2 gm of quinidine and 1 gm of procainamide were given and on the fourth day the amount of quinidine was increased to 3 gm. At this time, signs of heart failure were increasingly apparent and the blood urea nitrogen was 68 mg per 100 cc. On the fifth day, 4.2 gm of quinidine was given, yet the arrhythmia persisted at a rate of 160 to 140 beats per minute.

On the morning of the sixth day, a decision was made to attempt to terminate the ventricular tachycardia by electric countershock. The patient was anesthetized with intravenous sodium pentothal and nitrous oxide. Succinyl choline was also given.

From the Departments of Medicine and Pathology, Mount Zion Hospital and Medical Center, San Francisco 15.

Submitted November 5, 1962.

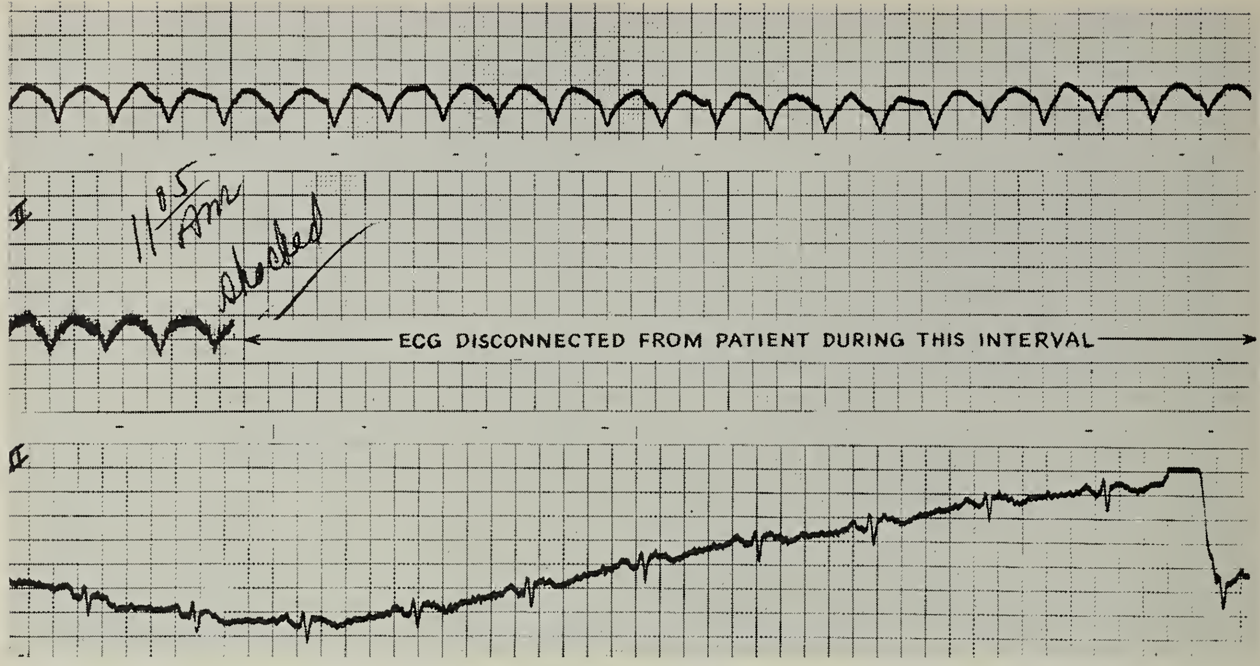

Figure 1.—Continuous lead II recording showing ventricular tachycardia and the reversion to sinus rhythm following electric countershock.

The electrical activity of the heart was observed with an electrocardiograph, and an external pacemaker was held in readiness for use in case of cardiac standstill. Conductive paste was applied to the electrodes and was rubbed into the skin only over the apical area of the heart and at the midright sternal border. The countershock electrodes, 8.5 cm in diameter, were then firmly placed on the two prepared areas. The cable from the electrocardiograph machine was disconnected from the patient just before the application of a single external countershock (440 volts, 60 cycle AC, 0.25 second duration). Immediately thereafter the machine was reconnected and the tracing revealed a sinus mechanism at a rate of 68 beats per minute (Figure 1). The blood pressure promptly rose from 90/60 to 170/90 mm of mercury and norepinephrine was reduced. When the patient awakened from anesthesia, clinical improvement was apparent and progressive. The blood pressure stabilized, pressor agents were discontinued within 24 hours, and the blood urea nitrogen returned to normal levels. Subsequent electrocardiograms demonstrated evolutionary changes of a myocardial infarction and convalescence was uneventful.

Electric countershock has been employed in the termination of ventricular fibrillation,[2,7] ventricular tachycardia[1,6] and supraventricular tachycardia.[3,6] When successful, its effect is both immediate and dramatic. It is well to point out that the nature of the underlying cardiac disease, the general anesthesia, and the possibility of ventricular fibrillation or standstill following electric shock, entail risks which must be carefully evaluated. Yet, this procedure may indeed prove to be a more valuable form of therapy than the administration of massive doses of toxic antiarrhythmic drugs.[4,5] In the present case it was promptly successful after failure to restore normal rhythm with drugs.

SUMMARY

Persistent ventricular tachycardia which followed an acute myocardial infarction was unsuccessfully treated with large doses of antiarrhythmic drugs for five days. The arrhythmia ended immediately following the application of external electric countershock.

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EDITORIAL

1963 Annual Session

THE CLOSING DAYS of March saw another Annual Session of the California Medical Association, the ninety-second such meeting in the 107-year history of the Association.

A brief summary of the meeting can easily be stated in two words—most successful.

Attendance by physicians and guests was somewhat lower than in the past few years but still presented a fairly sizable total, about 2,500 physicians and about the same number of exhibitors, family members and guests. The technical exhibits were of top quality and in the usual large number. Scientific exhibits were dispensed with this year because of the paucity of member-oriented study and research.

Scientifically, the meeting produced an excellent program, a tribute to the Committee on Scientific Work and its section officers. Five outstanding guest speakers appeared on the program, together with a panel of basic science professors from northern medical schools. One of the distinguished guest speakers has expressed the opinion that this is the finest state scientific meeting he has ever encountered in a considerable experience as an out-of-town expert.

On the business side, the House of Delegates had 99 resolutions to consider, along with a number of proposed amendments to the Constitution and Bylaws. Reference committees of the House were augmented this year by adding two additional members to each. Through this and other means the business of the House was expedited and all delegates were assured ample opportunity to review committee recommendations in advance of their presentation for action.

A salient of the meeting was the adoption of amendments to the Constitution and Bylaws under which the new Scientific Board of the California Medical Association will function.

New Bylaw provisions approved a year earlier aided the House immeasurably by requiring the submittal of resolutions in advance of the meeting. Component societies took this new requirement into consideration and in most instances were prompt in filing those resolutions adopted in caucus. There remained a number of resolutions proposed by individual delegates, not accepted by component society caucuses but submitted by the individuals. Some of these apparently prompted a resolution which would have called for restricting all business of the House of Delegates to those subjects enumerated as objects of the C.M.A. in its Constitution. This proposal drew prolonged and spirited debate on the floor but was defeated in the interests of maintaining freedom of speech. Regardless of this defeat, the so-called "gag rule" resolution brought squarely before the House of Delegates the question of whether or not the members of that body should spend their time discussing subjects as far afield of medical practice as department store service charges on charge accounts or the contingent fees of attorneys.

From both the scientific and business angles, the 1963 Annual Session must be considered a great success. To the officers of the Association, to the Speaker and Vice-Speaker of the House of Delegates, and to the many staff members who have continually worked to improve the mechanics of presenting a meeting of this character and size, we owe a vote of thanks. Their efforts have been most fruitful and should not remain unnoticed.

The Voice of the Physician

Both for the good advice it has for all the members of the California Medical Association and the view it gives of the leadership of our newest component society, the President's Message from the February issue of the Forty First Medical Society's official journal is reprinted this month in *California Medicine*, page 295.

The journal that gave us permission to reprint is *The California Clinician*. It is an attractive one. The name of the president whose message it is, is Milton S. Futterman, M.D. He talks sense.

Peripatetic President

THE PAST YEAR has seen a future president of the American Medical Association playing a tremendously important part in portraying to the public the true position of the medical profession in the battle against government-controlled, government-dominated, compulsory-taxed medical care for the aged.

Doctor Edward R. Annis of Miami, an unknown in national medical ranks two years ago, emerged in opposition to the King-Anderson proposal of 1961 so spectacularly that his fame preceded him to the point that the A.M.A. elected him president-elect in 1962. This must surely rank as a meteoric advance by an individual member who had not gone "through the chairs" before achieving the top spot in medical organization.

Since last year Doctor Annis has continued his campaign to acquaint the public with the position of medicine and with the true facts behind bureaucratic and political proposals to tax all the people for limited medical care for those above the 65 age limit regardless of need.

California was most fortunate in having Doctor Annis and his talents available for the final ten days of March. He came to the state with the avowed desire to be kept busy and to make maximum use of his time. That he succeeded admirably in this desire is attested by a mound of press clippings, some of full-page size, which reported his many addresses, gave personal interviews and explored his basic philosophy of medical care rendered without the hindrance and domination of government.

In ten days Doctor Annis appeared before 25 audiences, some numbering as many as 1,200 people and the entire list totaling some 12,500 people. These were medical and lay audiences both, some of mixed complexion and many including civic and community leaders.

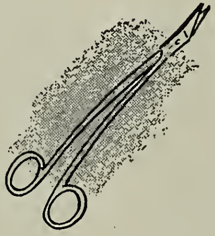
On top of this busy speaking schedule, parts of which required the use of chartered airplanes, Doctor Annis made three television appearances, five radio appearances and still found time to tape several programs for later television release.

In the hope that they will be useful to individual physicians who may have occasion from time to time to state the case for freedom from statism in the practice of medicine, excerpts from Dr. Annis' speeches are printed elsewhere in the current issue of your journal. (See page 286.)

Happily we can announce that Doctor Annis was not only busy while he was in California but was most effective. His straightforward meeting of issues, his keen analysis of legislative proposals and his telling statements of opposition have indeed had a profound effect on the public attitude. Recent nationwide polls show public support of King-Anderson proposals to have slipped considerably. Together with administrative priorities having shifted to other legislative proposals, the loss of public support is considered one of the major reasons for deferring Congressional action on King-Anderson until next year. There is no guarantee that such deferral will remain solid but present evidence is that King-Anderson will not emerge as an active issue in Congress until 1964.

On the state level the weekly publication of the California Labor Federation, AFL-CIO, blasted Doctor Annis and other medical leaders in the C.M.A. and A.M.A. in its issue immediately following Doctor Annis' tour of the state. Apparently the following he attracted with his call for truthfulness in legislation has stung some of the proponents of King-Anderson. In his California appearances Doctor Annis left one key admonition for physicians. He stressed and reiterated the position that medicine has definite and valid grounds for opposing King-Anderson legislation, that medicine has the right to speak out in its opposition and that medicine's position will not be known to or appreciated by the public *unless medicine does speak out.*

Surely Doctor Annis has proved his own effectiveness. He is a private practitioner who is gifted with the ability to think and speak clearly and effectively. There are others of his ilk in our own ranks. Let us hope that other physicians will take heed of his urging to become more vocal. The public has demonstrated its willingness to listen and to change its position when given the facts. Our job is to make sure that the facts are provided. The people will do the rest.



California MEDICAL ASSOCIATION

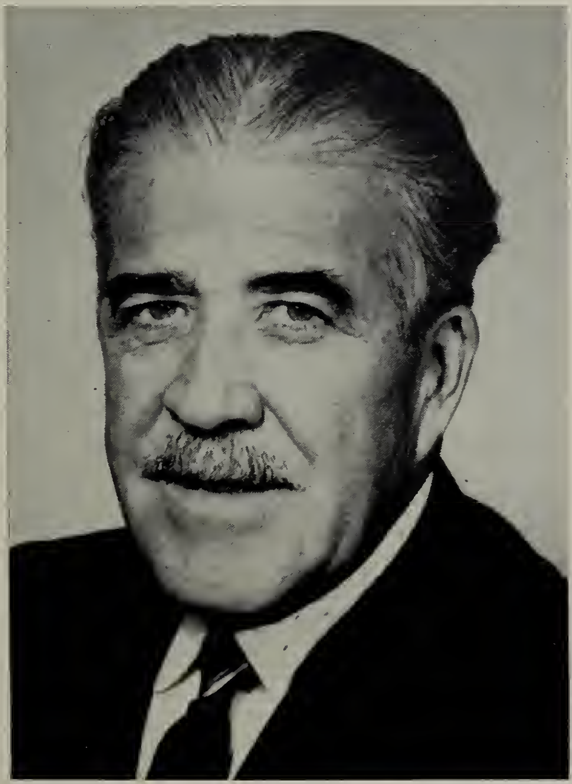
NOTICES & REPORTS

James C. Doyle, M. D.
C. M. A. President-Elect

Doctor James C. Doyle was unanimously elected President-Elect of the California Medical Association on March 26, 1963.

As Speaker of the House of Delegates since 1955, he has been noted for his fairness, his sincere efforts to streamline the introduction of resolutions, and his willingness to work far and beyond the call of duty for the good of medicine.

He graduated from Northwestern University in 1927; he has been the recipient of numerous honors in his community of Beverly Hills. He has been a member of the Board of Directors of the Beverly Hills Chamber of Commerce and was President of that organization in 1947. He was a recipient of the Beverly Hills Gold Cup Trophy for outstanding community service in 1958.



JAMES C. DOYLE, M.D.

He has been widely sought as a speaker for civic organizations and has devoted much of his time to these good causes.

Not the least of his many assets are his charming wife, Jackie, and his seven wonderful children.

His attainments on a professional level are equally high, as he is a Fellow of the American College of Obstetrics and Gynecology and Assistant Clinical Professor of Gynecology at the University of Southern California School of Medicine.

Those who have had the pleasure of working with him over the years recognize his complete devotion and his willingness to give all the time and talent necessary to any job, large or small.

To list all his past and present activities for organized medicine, as well as his effectiveness as a Delegate to the American Medical Association, would indeed be repetitious. He is a team worker and I am sure that in the team of Sam Sherman, Carl Anderson and Jim Doyle, the members of the California Medical Association have a fine trio indeed.

The new President-Elect is a wonderfully likeable man; a fine civic citizen; a fine physician; a knowledgeable man in the affairs of the California Medical Association. And I am sure he will receive the cooperation he so richly deserves from all the members.

William F. Quinn, M.D.

SAMUEL R. SHERMAN, M.D.	President
JAMES C. DOYLE, M.D.	President-Elect
WILLIAM F. QUINN, M.D.	Speaker
IVAN C. HERON, M.D.	Vice-Speaker
CARL E. ANDERSON, M.D.	Chairman of the Council
BURT L. DAVIS, M.D.	Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D.	Secretary
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Annis Quotes

Dr. Edward R. Annis, President-Elect of the American Medical Association, has been speaking to audiences the country over for the purpose of bringing Medicine's reasons for opposing legislation of the King-Anderson type to the attention of the public at large. The following are excerpts from the speeches he has made in California and elsewhere.

"We are not defending a profession. We are not promoting our own personal interests. We are promoting fundamental principles which underlie the very system that makes our government operate."

"No one knows more than we do the cost of American medicine, but no one knows better than those of us who deal with it every day the real worth which is made available to all the American people."

"This year, next year, and for as long as necessary, we intend to continue with courage and success—and without compromise on basic principles. To spell it out, that means no compromise in our opposition to the idea of financing health care through the Social Security system."

"Unfortunately, this whole subject [financing medical care of the aged] has been turned into a political football during the past three years. Actually, it is a non-partisan issue which should be resolved on a basis of facts instead of emotion, reason rather than rallies. It involves principles and approaches which go beyond the fortunes of any political party or the political ambitions of any individual."

"The medical cost problems that do exist among the aged are problems of individuals, not of an entire age group."

"The medical profession asks only two things in 1963: That the American people continue to study carefully all the facts and realities involved in this issue [medical care of the aged] and that the U.S. Congress in 1963 base its judgment on common sense rather than common politics."

"If it [medical care of the aged] passed, only two steps would be necessary to push the U.S. into full-scale nationalized medicine—providing full medical care (including all physicians' services) for the aged, and then lowering the age restrictions until all Americans are legislated into a government 'health' program from the cradle to the grave."

"Federalized hospitalization for the aged was exposed before the last Congress and the people as a hoax and a fraud. It was demonstrated again and again that the program would do what the proponents piously denied it would do: namely, permit government intervention in the practice of medicine in this country for the first time and begin destruction of the twin traditions of freedom of the patient's choice and freedom of the doctor's practice which have made American medicine one of the wonders of the modern world."

"Whatever alternative proposals or purported medicare compromises are put forward in the months to come, Americans should see them all as merely different routes to the same destination—government control of the practice of medicine."

Council Meeting Minutes

Minutes of the 489th Meeting of the Council, Los Angeles, Ambassador Hotel, March 23-27, 1963.

The meeting was called to order by Chairman Anderson in the Colonial Room of the Ambassador Hotel, Los Angeles, on Saturday, March 23, 1963, at 10:00 a.m.

Roll Call:

Present were President Wheeler, President-Elect Sherman, Speaker Doyle, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors MacLaggan, Wilson, Todd, Quinn, O'Neill, Bullock, O'Connor, Ham, Rogers, Dalton, Murray, Davis, Miller, Watts, Campbell, Morrison, Kaiser, Anderson, Cosentino, Grunigen and Dozier.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Whelan, Klutch, Tobitt and Bowman, Doctors Miller and Batchelder and Mrs. Griffith of C.M.A. staff; Messrs. Hassard and Huber of legal counsel; Messrs. Read and Salisbury and Putnam of the Public Health League of California; county executives Scheuber of Alameda, Geisert of Kern, Baker of Los Angeles, Bannister of Orange, Brayer of Riverside, Dochterman of Sacramento, Donmyer of San Bernardino, Nute of San Diego, Neick of San Francisco, Thompson and Monnich of San Joaquin, Wood of San Mateo, Donovan of Santa Clara, Colvin of Monterey, Brown of Sonoma, Bailey of Tulare and Rideout of Butte-Glenn; Doctors Daniel Blain and Dan Lieberman of the State Department of Mental Health; Doctor Lester McDonald of the State Department of Social Welfare; Frank R. McDougall of the California Hospital Association; Doctor T. Eric Reynolds and Messrs. Babb and Heller of California Physicians' Service; Doctors Warren L. Bostick, W. Ballentine Henley, John E. Vaughan, J. E. Feldmayer, Arthur A. Kirchner, Wilbur Bailey, Francis E. West and others.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 487th Council meeting, held February 16, 1963, were voted approval.

2. *Membership:*

(a) A report of membership as of March 20, 1963, was presented and ordered filed.

(b) On motion duly made and seconded in each instance, ten applicants were voted Associate Membership. These were: Horace Earl Gordon, Harriet S. Kaplan, Los Angeles County; Frank G. S. Christie, Reginald Rood, Roy Sherwood Wagner, Napa County; Lewis F. Ellmore, Donald G. Ramras, Rufus A. Schneiders, Henry M. Terry, San Diego County; Robert A. O'Reilly, Santa Clara County.

(c) On motion duly made and seconded in each instance, eleven applicants were voted Retired Membership. These were: Lawrence M. Hill, Louis E. Mahoney, Marian Monica Millitzer, F. Kearney Sauer, Stella Lehr Zimmerer, Los Angeles County; Werner Bab, Francis B. Quinn, Edward Salomon, San Francisco County; Elmer W. Smith, San Joaquin County; Brooks P. Stephens, Santa Clara County; C. R. Illick, Ventura County.

(d) On motion duly made and seconded in each instance, 15 members were granted a reduction of dues because of postgraduate study or prolonged illness.

3. *Supplementary Report of Council:*

On motion duly made and seconded in each instance, unanimous approval was given to the introduction of two additional resolutions into the House of Delegates. These covered (1) the accreditation of nursing homes and (2) an expression of thanks to the press, radio and television for their support in the polio immunization campaigns. (See item 5.)

4. *Report of the President:*

President Wheeler outlined his experiences of the past year, thanked the Council for its support during his term of office and urged that study be given to the reimbursement of future officers for their continued time required by holding office and being absent from their own practices.

5. *California Medical Education and Research Foundation:*

Doctor Wheeler, reporting in behalf of C.M.E.R.F., urged that a thorough study be made of the role of the medical profession in society as a whole. On motion duly made and seconded, it was voted to inaugurate such a study and to add this item to the supplementary report of the Council to the House of Delegates.

6. *State Department of Mental Hygiene:*

Doctor Daniel Blain, State Director of Mental Hygiene, gave a brief statistical review of the department's activities and pointed out that the incidence of patients resident in the state for less than one year was four times greater than that of longer term residents.

Doctor Blain, who has resigned his office for health reasons, also expressed his thanks to the Council for its continued support of his program and urged that continued support be given his successor. The Council expressed its appreciation to

Doctor Blain and extended him best wishes for the future.

7. *State Department of Social Welfare:*

Mr. Whelan, in behalf of Doctor Lester McDonald, medical director of the State Department of Social Welfare, reviewed a statistical report of the medical care cases handled by the department.

8. *California Physicians' Service:*

Doctor John G. Morrison, board chairman of C.P.S., made a brief report on current activities and thanked President Wheeler for his activities and published remarks in support of C.P.S.

9. *Medical Executives Conference:*

Boyd Thompson, chairman of the Medical Executives Conference, reported that the conference (1) had voted to request the Bureau on Communications to make a full report on the position of California Physicians' Service as fiscal agent for M.A.A. programs in the counties, and (2) had asked that the Association forward all available information on regional hospital planning to the component societies for their information and direction. Mr. Thompson also reported that Joseph Donovan of Santa Clara County had been elected chairman of the conference for the coming year.

10. *California Hospital Association:*

Frank R. McDougall, president of the California Hospital Association, reported that he has been making a tour of the smaller cities of California and has concluded that regional hospital planning is needed if the public franchising of hospitals is to be avoided.

11. *Additional Council Business:*

Councilor Davis, chairman of the Finance Committee, proposed that a Bylaw amendment be introduced into the House of Delegates to advance the dues delinquency date from April 1 to February 1 of any calendar year. On motion duly made and seconded, it was voted to introduce this amendment.

12. *Report of President-Elect:*

Doctor Sherman reported on various visits to component societies and also reported on the medical aspects of a medical-legal symposium recently staged by the American Medical Association in Miami Beach. Mr. Whelan supplemented this report with a review of the legal aspects of the program.

13. *Committee on Committees:*

Doctor Sherman presented a list of proposed commission and committee appointments approved by the Committee on Committees. On motion duly made and seconded, this list was approved.

On motion duly made and seconded, it was voted to request the Committee on Committees during the coming year to make a thorough review of the entire structure of commissions and committees and their functions.

14. *State Employment Service:*

Doctor Wheeler reported on a proposal advanced by the State Employment Service to establish a nurses registry in Sacramento in competition with established registries.

Doctor Glenn Pope of Sacramento supplemented this report. On motion duly made and seconded, it was voted to refer this to the Committee for Emergency Action for discussion with state officials and to urge the component societies to establish liaison with the nurse registries in their respective areas.

15. *Committee on Legislation:*

Doctor Sherman presented a long list of proposed legislative bills affecting the public's health now before the State Legislature and requested instructions from the Council. The Council considered these measures individually and instructed the Committee on Legislation on procedures to be followed. Subjects covered by the list of legislation reviewed included air pollution, ambulances, atomic energy, chiropody, charities, civil defense, clinical laboratories, coroners, dangerous drugs, welfare aid, professional corporations and other items.

Recess and Reconvening at 7:30 a.m., Sunday March 24, 1963.

16. *State Department of Public Health:*

Doctor Malcolm Merrill, State Director of Public Health, gave a progress report on the activities of the department.

17. *Hon. Glenard P. Lipscomb:*

Hon. Glenard P. Lipscomb, member of Congress from the 24th California District, addressed the Council on some of the problems and methods in the Congress. He was thanked for his appearance and for his willingness to address the scheduled meeting of the California Volunteers for the American Medical Political Action Committee.

Recess and Reconvening at 7:30 a.m., Monday, March 25, 1963.

18. *Hon. Stephen P. Teale:*

The Council welcomed Hon. Stephen P. Teale, California state Senator and a physician, who reported on the activities of the State Legislature and paid tribute to Messrs. Read and Salisbury and Doctor Dan O. Kilroy for their able representation of the medical profession in Sacramento.

19. *Audio-Digest Foundation:*

Doctor Donald D. Lum, president of Audio-Digest Foundation, reported on the activities of the organization and introduced Mr. K. L. Hamman for a report on the business side and Mr. Claron Oakley, editor, for a report on the editorial side of the foundation. Mr. Hamman reported that Audio-Digest expects its sales in the fiscal year to end June 30, 1963, to pass the $500,000 mark, with sales of the tapes increasing and equipment sales continuing to decrease. He stated that 75 per cent of subscribers renew their subscriptions and that $50,000 would be available for distribution this year, one-half each to go to the American Medical Association-Education and Research Foundation and the California Medical Education and Research Foundation.

Mr. Oakley reported that Audio-Digest now employs seven editors, retains two part-time physicians to screen material and calls on 30 physicians throughout the country to assist in the preparation of material. An estimated 35,000 physicians now hear the tapes and this number will increase with the introduction on May 1 of a new service on ophthalmology.

On nominations duly made and seconded, the following were unanimously elected as members of the Board of Trustees of Audio-Digest Foundation: Gordon, Beckner, Thomas H. Brem, William D. Evans, Los Angeles; Samuel R. Sherman, San Francisco; Mr. K. L. Hamman, Oakland; Ivan C. Heron, San Francisco; Donald D. Lum, Alameda; Robert L. Marsh, Glendale; Mr. Claron L. Oakley, Los Angeles; John W. Pender, Palo Alto; Omer W. Wheeler, Riverside; James C. Doyle, Beverly Hills.

On motion duly made and seconded, the Council unanimously voted an expression of thanks to Mr. Hamman, Mr. Oakley and Doctor Lum for their handling of Audio-Digest affairs.

Recess and Reconvening at 7:30 a.m., Tuesday, March 26, 1963.

20. *Commission on Community Health Services:*

Doctor Harold Kay, chairman of the Commission on Community Health Services, reported on a resolution approved in 1962 on the staging of fluoridation drives throughout the state. On motion duly made and seconded, it was voted to refer the first portion of this resolution, requiring funds, to the Finance Committee and to take no action at this time on the second portion.

21. *Bureau on Communications:*

Doctor Bostick reviewed the current public relations situation of the Association and presented copies of a new pamphlet on insurance coverage available in California for those of 65 years or over. This pamphlet is scheduled for wide distribution.

Doctor Bostick also reported on a nationwide program to name key physicians in each Congressional District as key points in federal medical care proposals.

22. *Judicial Commission:*

On motion duly made and seconded, it was voted to send letters of commendation to the members of a district judicial commission recently established in the Sixth Councilor District, which has completed its assignment and disbanded.

Recess and Reconvening at 7:30 a.m., Wednesday, March 27, 1963

23. *Committee on Medical Aspects of Sports:*

Discussion was held on the part medicine might play in connection with the death of a boxer following a bout. On motion duly made and seconded, it was voted to refer this to the Committee on the Medical Aspects of Sports for prompt action in offering the services of the committee to state officials.

24. *New Councilors:*

The chairman introduced to the Council two new members elected the previous day. These were Doctors Gooel of the Third District and Charles B. Hudson of the Eighth District. They were welcomed by the Council.

25. *Subsidiary Organizations:*

Mr. Hassard gave a review of the organizations subsidiary to the Association, outlined their structure and their functions. These include Trustees of the California Medical Association, Physicians' Benevolence Fund, 693 Sutter Publications, Inc., California Medical Education and Research Foundation and Audio-Digest Foundation.

Doctor Sherman proposed that outgoing President Wheeler be named as consultant to the California Medical Education and Research Foundation for liaison with the medical schools. On motion duly made and seconded, it was voted to approve this proposal in principle, subject to official appointment at the next meeting.

Adjournment:

There being no further business to come before it, the meeting was adjourned on Wednesday, March 27, 1963, at 8:55 a.m. in memory of Mrs. Dan O. Kilroy.

CARL E. ANDERSON, M.D., *Chairman*
MATTHEW N. HOSMER, M.D., *Secretary*

No. 18*

Do You Hear Me?

Over the past months, following a petition submitted to the Industrial Accident Commission requesting a revision of the system for computing percentage of permanent disability in hearing loss cases, the Commission has held several open hearings and received a great deal of testimony on the subject. In essence the petition requested adoption of the system published by the American Medical Association Committee on Rating of Physical Impairment. Opposition to this change came primarily from plaintiffs' attorneys and Labor representatives. Those who supported the petition presented a solid scientific basis for replacement of a previous unscientific method that had been in use. No practical scientific evidence that would apply was presented by the opponents. A representative of the California Medical Association's Committee on Occupational Health and Mr. William Whelan, CMA Director of Special Services, attended the hearings and later submitted a letter to the Industrial Accident Commission, endorsing the proposed revision.

As a result of the proceedings, the Industrial Accident Commission has issued an order amending the method of rating for hearing loss cases. This conforms to the A.M.A. method, except that the range used for ratings includes five hundred to three thousand cycles rather than five hundred to two thousand cycles. In other respects it is consistent with the A.M.A. method.

At the same time, the standard permanent disability rating for complete unilateral loss of hearing has been raised from ten to fifteen per cent, and that for complete bilateral loss of hearing has been raised from fifty to sixty per cent.

These amendments are effective March 1, 1963, and apply to all injuries occurring on and after that date.

It is our opinion that the Industrial Accident Commission is to be commended for replacing an unscientific formula of rating with a method that derives from sound, scientific principles. This removes certain unjustifiable inequities that existed and, in cases of more pronounced degrees of hearing loss, may actually result in increased benefits to the injured workman.

Committee on Occupational Health
California Medical Association

Comments and Questions are Welcomed by the Committee

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*This is the eighteenth of a series prepared by the Committee on Occupational Health.

SAN JOAQUIN VALLEY COUNTIES

Presented by Stanford University School of Medicine, California Medical Association Committee on Continuing Medical Education, and the San Joaquin Valley County Medical Societies.

HOST: FRESNO COUNTY MEDICAL SOCIETY. Regional Chairman: Thomas J. Fuson, M.D., 2944 Fresno Street, Fresno.

INSTITUTE FEE: $15.00. For additional information contact the Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 2. All California Medical Association members and their families are cordially invited to attend.

regional postgraduate institute

Ahwahnee Hotel
Yosemite National Park

May 30-31, 1963

THURSDAY, May 30, 1963

8:15 a.m.—**Registration**

Morning Session

Presiding: Thomas J. Fuson, M.D., Fresno

9:00 a.m.-12:00 m.—**Problems in Infectious Diseases**

Introductory Remarks—M. Harry Jennison, M.D.

Antibiotic Sensitivity Testing—Kenneth Vosti, M.D.

Case Presentations: **Unexplained Fever**—Panel: Norman Kretchmer, M.D., Moderator; Lowell A. Rantz, M.D.; Harold J. Simon, M.D.

Intermission

Case Presentations: ***Staphylococcal Disease***—Panel: Harold J. Simon, M.D., Moderator; Sumner J. Yaffe, M.D.; George T. Wilson, M.D.

Bronchopulmonary Suppuration — Panel: Kenneth Vosti, M.D., Moderator; M. Harry Jennison, M.D.; Lowell A. Rantz, M.D.

12:00 m.—**Lunch**

Afternoon Session

2:30 p.m.-5:30 p.m.—**Renal Disease.** Presiding: Howard F. Corbus, M.D., Fresno

Case Presentations: **Pyelonephritis—Newer Concepts of Pathogenesis, Diagnosis and Treatment**—Panel: Lowell A. Rantz, M.D., Moderator; Norman Kretchmer, M.D.; Kenneth Vosti, M.D.; Sumner J. Yaffe, M.D.

Intermission

Glomerulonephritis—Review of Differential Diagnosis, Pathogenesis and Newer Concepts in Management—Panel: Norman Kretchmer, M.D., Moderator; Lowell A. Rantz, M.D.; Sumner J. Yaffe, M.D.

2:30 p.m.-5:30 p.m.—Concurrent Sessions, Electives, Presiding: Samuel Ross, M.D., Fresno.

The Depressed Patient—David A. Hamburg, M.D.

Dermatologic Problems—George Wilson, M.D.; Harry C. Wong, M.D. These will be work sessions with case presentations and other demonstration material. Preregistration required. Class limit 20.

FRIDAY, May 31, 1963

Morning Session

Presiding: Dale D. Kirkegaard, M.D., Fresno

9:00 a.m.-12:00 m.—**Problems of Adolescence**

Growth in Adolescence—Norman Kretchmer, M.D.

Case Presentations: ***Adolescent Acne***—George Wilson, M.D., Moderator; M. Harry Jennison, M.D.

Adolescent Breakdown—Panel: David A. Hamburg, M.D., Moderator; Norman Kretchmer, M.D.; M. Harry Jennison, M.D.

Endocrine Changes—Norman Kretchmer, M.D.; David A. Hamburg, M.D.

12:00 m.—**Lunch**

Afternoon Session

Presiding: Leo M. Goodman, M.D., Fresno

2:30 p.m.-5:30 p.m.—**Infectious Diseases**

Enteroviruses—Lowell A. Rantz, M.D.

Case Presentations: **Acute Respiratory Infections**—Panel: M. Harry Jennison, M.D., Moderator; Lowell A. Rantz, M.D.; Kenneth Vosti, M.D.

Newer Concepts of Immunization—Panel: M. Harry Jennison, M.D., Moderator; Harold J. Simon, M.D.; Kenneth Vosti, M.D.

Intermission

Aseptic Meningitis—Panel: Sumner J. Yaffe, M.D.; Moderator; Lowell A. Rantz, M.D.; Kenneth Vosti, M.D.

Systemic Fungus Infection—Panel: Harold J. Simon, M.D., Moderator; Lowell A. Rantz, M.D.; Kenneth Vosti, M.D.

2:30 p.m.-5:30 p.m.—Concurrent Sessions, Electives. The work sessions on **The Depressed Patient in Medical Practice**—interviewing techniques, newer drugs and general features of clinical management—and **Dermatological Problems** will be presented again this afternoon, if there is sufficient request.

In Memoriam

BARNES, L. B. (LUZERNE BRUCE) Newcastle (Placer Co.). Died February 11, 1963, in Sacramento, aged 78. Graduate of Hahneman Medical College of the Pacific, San Francisco, 1908. Licensed in California in 1909. Doctor Barnes was a member of the Placer-Nevada County Medical Society, a life member of the California Medical Association, and a member of the American Medical Association.

✤

BERNARDINI, C. (CAMILLO) Victor, San Diego. Died March 16, 1963, aged 63. Graduate of Indiana University School of Medicine, Bloomington-Indianapolis, 1926. Licensed in California in 1927. Doctor Bernardini was a member of the San Diego County Medical Society.

✤

CURTIS, C. (Cecil) C., Oakland. Died March 15, 1963, in Oakland, aged 66, of heart disease. Graduate of the California College of Medicine, 1962. Licensed in California in 1962. Doctor Curtis was a member of the Forty First Medical Society.

✤

DEWEY, HARTLEY GREAVES, Carmel. Died March 15, 1963, in Carmel, aged 70. Graduate of Cornell University Medical College, New York, 1918. Licensed in California in 1930. Doctor Dewey was a member of the Monterey County Medical Society.

✤

FOWLER, DONALD CARTWRIGHT, Mill Valley. Died March 20, 1963, in San Rafael, aged 64. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1926. Licensed in California in 1926. Doctor Fowler was a retired member of the Marin Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

GARLOCK, DEWITT H., Redlands. Died March 9, 1963, in Redlands, aged 74. Graduate of Rush Medical College, Chicago, Illinois, 1921. Licensed in California in 1931. Doctor Garlock was an associate member of the San Bernardino County Medical Society.

✤

HOLMAN, W. FRANK, Los Angeles. Died March 11, 1963, in Los Angeles, aged 86, of complete heart block. Graduate of Louisville Medical College, Kentucky, 1906. Licensed in California in 1911. Doctor Holman was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

LAMB, SAM EDWARD, Yreka. Died March 10, 1963, in Yreka, aged 42, of rheumatic heart disease and diabetes mellitus. Graduate of St. Louis University School of Medicine, 1948. Licensed in California in 1953. Doctor Lamb was a member of the Siskiyou County Medical Society.

LEEDS, ROBERT M., Castro Valley. Died March 2, 1963, in San Francisco, aged 38, of respiratory failure; systemic lupus erythematosus. Graduate of Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina, 1948. Licensed in California in 1953. Doctor Leeds was a member of the Alameda-Contra Costa Medical Association.

✤

MASCHMEYER, JOSEPH EVERETT, Arcadia. Died March 28, 1963, in Arcadia, aged 49, of adenocarcinoma of the colon with metastasis. Graduate of the College of Medical Evangelists, Los Angeles, 1942. Licensed in California in 1942. Doctor Maschmeyer was a member of the Los Angeles County Medical Association.

✤

McKEE, KEITH S., Bakersfield. Died March 3, 1963, aged 68. Graduate of Northwestern University Medical School, Chicago, Illinois, 1920. Licensed in California in 1921. Doctor McKee was a member of the Kern County Medical Society.

✤

PELAEZ, MANUEL J., Los Alamitos. Died March 2, 1962, in Los Angeles, aged 53, of heart disease. Graduate of the Université de Paris Faculté de Medecine, 1938. Licensed in California in 1947. Doctor Pelaez was a member of the Los Angeles County Medical Association.

✤

REED, WALKER W., Nevada City. Died February 26, 1963, in Nevada City, aged 59, of heart disease. Graduate of the University of Colorado School of Medicine, Denver, 1929. Licensed in California in 1930. Doctor Reed was a member of the Placer-Nevada County Medical Society.

✤

RULISON, ELBERT T., Santa Cruz. Died December 1, 1962, aged 79, of carcinoma of the bladder. Graduate of Cornell University Medical College, New York, New York, 1909. Licensed in California in 1911. Doctor Rulison was a retired member of the Sacramento Society for Medical Improvement and the California Medical Association, and an associate member of the American Medical Association.

✤

SUITS, CHARLES E., Avenal. Died February 18, 1963, in Fresno, aged 42. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1946. Licensed in California in 1946. Doctor Suits was a member of the Kings County Medical Society.

✤

THOLEN, EMIL FRANCIS, Beverly Hills. Died March 11, 1963, in Beverly Hills, aged 82, of myocardial infarction. Graduate of Rush Medical College, Chicago, Illinois, 1903. Licensed in California in 1907. Doctor Tholen was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

Evidence is conflicting as to the impact of Asian influenza on California this season. Considerable indication of the presence of the infection in many parts of the state has been forthcoming in the Viral and Rickettsial Disease Laboratory, but little information on community-wide outbreaks has been available.

School absenteeism remained essentially normal through the winter months but has not decreased as it usually does at this time of year. Industrial absenteeism has climbed moderately in some areas. Deaths from pneumonia and influenza have been elevated sharply in two of the last three report weeks. The evaluation of this information is complicated by the widespread presence of other epidemic diseases and the unseasonable weather in many parts of the state.

Laboratory-confirmed outbreaks have been described previously in two institutions, Stockton State Hospital and Yountville Veterans' Home. In addition, at the Preston School of Industry in Ione a respiratory epidemic caused illness in about one-fourth of the inmates. Laboratory studies are in progress.

The Merced County Health Department reported an increase in the number of patients admitted to the county hospital with pneumonia, but confirmation of the disease as influenza has not been obtained. It is known that primary atypical (Eaton agent) pneumonia and other respiratory diseases have been occurring throughout the Central Valley.

The strain of Asian virus causing this season's epidemic apparently differs to some degree from that of the original 1957 pandemic. Some authorities have stressed the importance of this antigenic variation, but at the Influenza Center for the Americas only minor variations have been noted. Likewise, claims of relative ineffectiveness of the polyvalent vaccine used this season have been made, but studies done under more carefully controlled conditions at the U.S. Communicable Disease Center in Atlanta have demonstrated "quite adequate protection."

The nationwide toll taken by this epidemic has been considerable; 3,478 excess pneumonia and influenza deaths have been reported since the first of the year, as have 17,004 excess deaths from all causes. Several studies have shown an unexpectedly low attack rate among teenagers in affected areas.

* * *

The annual mussel quarantine went into effect May 1 along the entire California coast, including San Francisco Bay and all other bays, inlets and harbors. During the period of quarantine, May 1-October 31, mussels may concentrate a toxic material that is highly poisonous to man.

The quarantine prohibits the taking, sale or offering for sale of mussels, except for use as fish bait.

* * *

An adolescent unit to provide medical care for outpatients from 12 to 17 years of age has been opened at Los Angeles Childrens Hospital under the direction of Dr. Donald Weston. This will help provide for the medical needs of adolescents who are no longer pediatric patients yet whose specific problems of growth and development may be unfamiliar to the physicians who provide medical care to the adult.

Before seeing an adolescent patient, Dr. Weston makes an appointment with the parents and from them gathers all pertinent information about the child's medical history and his adjustment to family, school and friends. He explains at that time that he will be the child's doctor and that what takes place between him and the child will be held in medical confidence. If there is to be any discussion with the parents, it would have to be with the child's permission. He assures the parents, however, that whenever he believes it to be important to do so he will urge the youngster's cooperation in sharing information with them.

In addition to providing medical care for adolescent patients, the Unit has three other major objectives: To provide training to resident doctors and community physicians in how to deal with an adolescent patient as a total person; to develop research programs to learn more about the physiological and psychological processes of adolescence and thus devise better diagnosis, therapeutic and preventive medical care; and to focus the community's attention on the normal physiological and emotional needs of the adolescent.

INFORMATION

Control of Cancer Quackery

The 1959 California Legislature, in Senate Bill No. 194, gave the Department of Public Health responsibility for the enforcement of a program to protect the public from unorthodox or unproven methods for the diagnosis, treatment, alleviation or cure of cancer.

To assist and advise the department, this antiquackery law authorized gubernatorial appointment of a 15-member Cancer Advisory Council consisting of nine physicians and surgeons, two representatives from cancer research institutes, three others who are not physicians and surgeons, and the Director of the Department of Public Health. At the first meeting in January, 1960, John W. Cline, M.D., was elected chairman of the Council for the ensuing year. He was reelected in 1961 and 1962. The membership of the Council in addition to the chairman is as follows:

Sol R. Baker, M.D., Beverly Hills
Mrs. Robert L. Brown, Encino
Renato Dulbecco, M.D., South Pasadena
L. Henry Garland, M.D., San Francisco
Mr. Seymour Graff, San Marino
Edith R. Lindly, Ed.D., Fresno
Thomas S. Nelsen, M.D., Palo Alto
O. B. Pratt, M.D., Los Angeles
Joseph F. Ross, M.D., Los Angeles
Sol Silverman, Jr., D.D.S., San Francisco
M. H. Simmers, M.D., Los Angeles
Jesse L. Steinfeld, M.D., Los Angeles
David A. Wood, M.D., San Francisco
Malcolm H. Merrill, M.D., Berkeley, *ex-officio member*

The legislation requires anyone offering an agent for the diagnosis or treatment of cancer to furnish samples, on demand, for investigation or testing by the department. When it is established by scientific and legal processes that this agent is misrepresented or ineffective, the department may order that its use be discontinued. This is accomplished after adequate investigation by the State Department of Public Health and after a hearing is held before a hearing officer from the Office of Administrative Procedure. This hearing is administrative in nature, and follows a procedure much less formal than that ordinarily employed in courts before judges or juries. These administrative proceedings are subject to judicial review but in this event the court considers only the written transcript of the administrative hearing, together with briefs, and no further testimony is taken. If the Department's Cease and Desist order is not complied with, it may under certain circumstances initiate criminal prosecution.

Within the Department of Public Health a Cancer Diagnosis and Therapy Evaluation Unit has been established to furnish staff service to the Council and to carry out the antiquackery program. This unit is staffed by K. F. Ernst, M.D., as head, Mr. J. Richard Jackson as field representative and appropriate secretarial help.

During the three years the program has been in operation the following action has been taken by the Council and the State Department of Public Health.

- A cease and desist order against Catherine E. Harmon, D.C., from the use of an electronic device in the treatment of cancer.

- A cease and desist order against Charlotte M. Steiner, D.C., from the use of a grape diet and Mucorhicin in the treatment of cancer.

- Nelson E. Mathison, M.D., and John H. Friend, M.D., have consented to the issuance of a cease and desist order from the use of Hoxsey remedy.

- A regulation prohibiting the prescribing or administering of the Hoxsey medication which consists of potassium iodide and extracts of several roots and herbs has been adopted by the California State Board of Health.

In addition, numerous investigations have been undertaken with respect to such agents as the Koch and Lincoln methods, Laetrile, Mohs Ointment and the Bolen diagnostic test for cancer. Further administrative action is now in progress on several individuals.

The department has received pledges of support from the deans of the schools of medicine in California, individual physicians and other scientists, State Boards of Medical and Osteopathic Examiners and other groups. Support of all practicing physicians and of all agencies in the state is needed and is earnestly solicited. This support may take any or all of the following forms:

(a) When treatment of patients with unproven methods comes to the attention of any physician, society, bureau or other agency, the local County Medical Society or the local branch of the American Cancer Society should be notified and requested to pass the information on to the State Department of Public Health, 2151 Berkeley Way, Berkeley 4, California. The latter agency may also be notified directly by mail or telephone to Dr. K. F. Ernst, THornwall 3-7900, extension 321.

(b) Historical notes to record methods of diagnosis, claims and details of treatment, name of the treatment and of the clinic or individual offering it and the cost of the treatment should be made while still fresh in the patient's mind. If it is suspected that the diagnosis of cancer is false, diagnostic studies to confirm the diagnosis or to show that it is incorrect should be performed after making arrangement with the Department of Public Health.

(c) Objective findings for comparison with those before treatment, if known by the physician or stated by the patient, should be recorded.

(d) Autopsies on patients who die after treatment with unproven methods should be encouraged.

Factual or opinion testimony by physicians or other scientists regarding physical findings or the efficacy of a given remedy is of tremendous value when a case is being considered before a hearing officer.

MALCOLM H. MERRILL, M.D.

The Voice of the Physician

FOR MANY DECADES, the American physician has been so preoccupied with his prime responsibility, that of safeguarding the people's health in his community, that he has not actively participated in the affairs of the world about him. Oh, he reads the papers occasionally, listens to the news while driving his car, grumbles and complains about Washington or Sacramento, resolves to write a letter to somebody or some newspaper and never does, or vows to go to a district society meeting and complain about something or other, and never does. Many physicians feel that if they give their energies and skill and knowledge to the people, the people in turn will form a protecting shield around the physician.

So it comes as a rude shock to realize that the medical profession has become a pawn in the world of economics. The doctor's services are bartered by labor, management, insurance companies, and government. In many instances this without his consent or knowledge. He is only informed afterward what his fee for services will be.

If the medical profession complains or tries to negotiate its position, it is immediately placed on the defensive by skillful and insidious propaganda. The doctor is reminded of his "oath" or is painted as a money-hungry ogre in a huge car refusing to treat little children who are desperately ill. The paradox then exists that, while the medical profession as a whole becomes deprived of public sympathy and protection, each patient or community respects his or its doctor. The individual physician falls into this trap of individual security and does not see the total encroachment on his rights and privileges both as an individual and as a physician.

But the hour of decision is rapidly approaching and the problem must be met head on. The struggle in Saskatchewan ended in an armed truce. The government in that Canadian Province has not lost its original intent to completely control the medical profession. The medical profession, there, is in a desperate effort to hold on until elections are held approximately two years hence. Only then will we know who won.

In this country, action on King-Anderson legislation was delayed by narrow margins. Delayed, because skilled politicians do not accept "no" for an answer, but strike again and again until their objectives are achieved. And this year, one of our staunchest supporters, Senator Kerr of Oklahoma, has passed from the scene. In this year and in 1964, the philosophy of free medical care for those over 65 will become a prime administration and campaign issue and once again, the physician's rights and privileges will be up for barter.

What can we do, and what must we do? The physician must come out of his ivory tower and become politically oriented and politically motivated. What was abstract philosophy previously has now become the cold hard fact of existence.

Thus this year of decision must also become a year of communication. The individual physician must become conscious of his role in the public relations of the profession. Remember that there are several million patient contacts every month! The powerful influence that the physician can exert in his daily contact with patients has been vividly demonstrated in our recent victory on Proposition 22. But for this avenue to be effective, the physician must become informed and eloquent and show the patient that he is acting in his best interest.

Communication is a two way street. "Organized medicine" is transmitting its messages and listening for an answer from the physician and the public. The politicians are busy transmitting their messages to the public and listening for its reaction. Where is the physician? He has to receive and understand all of these and then transmit his messages to all—the medical association, the politician, the public. This involves effort—but effort he must expend for survival. This involves going to association meetings, joining the Public Health League, and Ampac. This involves membership in political parties, participation in community affairs, and civic committees. This involves a good patient physician relationship.

Thus shall the voice of the physician be heard throughout the land.

MILTON S. FUTTERMAN, M.D.
President, Forty First Medical Society

Reprinted from *The California Clinician*, 59:19, Feb., 1963.

Special Report for *California Medicine*
By the Bureau of Research and Planning

Some Recent Changes in the Composition of Physicians In California

THE PAST SEVEN-MONTH period has seen some interesting changes take place in the composition of physicians in non-federal practice within the State of California. The number of General Practitioners increased almost 10 per cent and the number of part-time specialists more than doubled. The changes are the more noticeable since these classifications have consistently shown decreases during the past several years.

The cause of these increases was the merger with Osteopaths effected in late 1962. These changes affect the overall composition of physicians within the State. The most substantial alteration is in the proportion of part-time specialists among all non-federal physicians; in June, 1962, this group accounted for only 3.9 per cent of the total, whereas in February, 1963, it accounted for 7.4 per cent.

Table 1 shows numbers of physicians by type of practice before and after the merger. Excluded are all physicians employed by the federal government. The overall increase of 9.9 per cent is, for the most part, attributable to the approximately 2,335 Osteopaths who became M.D.'s during this period. It is estimated that net in-migration of physicians during this seven-month period accounted for under 300 of the overall increase of 2,643.

The increase in part-time specialists is, of course, the most substantial among the major private practice groups shown in Table 1. Both this and the increase in General Practice are due to the inclusion of former Osteopaths; the number of former Osteopaths within these two categories is, in fact, most probably greater than the differences between the July and February figures shown in the table, since both categories might otherwise have been expected to show decreases. The increase in full-time specialists is, on the other hand, due to net in-migration and to California physicians entering private practice during this period.

Among those physicians not in private practice, the Laboratory Medicine classification shows the greatest increase. The change is somewhat misleading, however, since many Pathologists formerly considered by A.M.A.'s Records Department as private practitioners (full-time specialists) are now classified within this group. Increases in Medical School Faculty and Medical Administration are primarily due to the merger, whereas changes in the Hospital Service, Preventive Medicine, and Retired groups can be attributed to natural increases. The increase in the Research category is probably due to a combination of reasons which cannot be determined from the data included in this report. A slight decrease is shown in the number of Interns and Residents; this may be seasonal, since a report for October, 1962 indicated higher figures than for either July or February.

TABLE 1.—*Type of Practice of Non-Federal Physicians in California, July, 1962 and February, 1963*

Type of Practice	July, 1962	February, 1963	Per Cent Change
General Practice	5,447	5,964	+ 9.5
Full-time Specialty	12,653	13,003	+ 2.8
Part-time Specialty	1,047	2,189	+109.1
Total Private Practice	19,147	21,156	+ 10.5
Intern and Resident	3,219	3,175	− 1.4
Full-time Hospital Staff	1,040	1,096	+ 5.4
Medical School Faculty	429	573	+ 33.6
Administration	141	263	+ 86.5
Laboratory Medicine*	54	191	+253.7
Preventive Medicine	592	610	+ 3.0
Research	179	252	+ 40.8
Retired and Not in Practice	1,980	2,108	+ 6.5
Total, Not in Private Practice	7,634	8,268	+ 8.3
TOTAL	26,781	29,424	+ 9.9

*Increase due primarily to reclassification of many Pathologists formerly listed as full-time specialists in private practice.

Table 2 shows data for physicians in General Practice and for those who engage in specialties on a part-time basis only. Estimates are indicated as to the number of former Doctors of Osteopathy who practice these specialties. The addition of these physicians approximately doubled the number of part-time Anesthesiologists, Dermatologists, General Surgeons, Orthopedists, Colon and Rectal Surgeons, Urologists, and physicians practicing Preventive Medicine. Numbers of Internists and Obstetrician-Gynecologists were almost tripled. The most marked increase is noted in the specialty of Physical Medicine and Rehabilitation; this specialty had one part-time practitioner last July and twenty-one the following February.

This table also shows a comparison between the former Osteopaths and the original group of M.D.'s in part-time specialties. The Osteopathic group is far more prevalent in Internal Medicine and Obstetrics-Gynecology; the original M.D. group shows relatively higher proportions in Psychiatry and Pediatrics.

Data contained in this report are taken from the A.M.A. Directory Report Service Quarterly Tables, which contain information as to Type of Practice and Specialty by State. Since A.M.A. has continued to refine type of practice classifications in recent years, there has occurred a degree of change due only to the redistribution of physicians. This is most

TABLE 2.—*Private Practice: Part-Time Specialties and General Practice in California, July, 1962 and February, 1963*

Specialty	Part-time Specialists and G.P.'s		Estimated Breakdown of Former D.O.'s		Per Cent Breakdown of Former D.O.'s (excludes G.P.'s)	Estimated Per Cents of M.D.'s (excluding Former D.O.'s) by Specialty (excludes G.P.'s)
	July 1962	Feb. 1963	Number[4]	Per Cent		
Administrative Medicine	1	0	0	....	....	0.1
Internal Medicine[1]	167	428	261	15.9	23.2	16.0
Anesthesiology	63	121	58	3.5	5.1	6.0
Preventive Medicine[2]	44	92	48	2.9	4.3	4.2
Psychiatry	57	73	16	1.0	1.4	5.5
Dermatology	16	29	13	0.8	1.2	1.5
Pathology	7	7	0	....	....	0.7
General Practice	5,447	5,964	517	31.4	....	....
General Surgery	393	776	383	23.3	34.0	37.7
Neurosurgery	2	3	1	....[5]	0.1	0.2
Neurology	4	7	3	0.2	0.3	0.4
Obstetrics-Gynecology	130	349	219	13.3	19.4	12.5
Ophthalmology	14	16	2	0.1	0.2	1.0
Orthopedic Surgery	18	40	22	1.3	2.0	1.7
Otolaryngology	15	18	3	0.2	0.3	1.4
Pediatrics[3]	64	97	33	2.0	2.9	6.1
Physical Medicine and Rehabilitation	1	21	20	1.2	1.8	0.1
Plastic Surgery	2	5	3	0.2	0.3	0.2
Colon and Rectal Surgery	17	39	22	1.3	2.0	1.6
Radiology	11	17	6	0.4	0.5	1.1
Thoracic Surgery	1	1	0	....	....	0.1
Urology	16	31	15	0.9	1.3	1.5
TOTAL	6,490	8,134	1,644*	100.0	100.0	100.0

[1] Also includes Allergy, Cardiovascular Diseases, Gastroenterology, and Pulmonary Diseases.

[2] Also includes Aviation Medicine, Occupational Medicine, and Public Health.

[3] Also includes Pediatric Allergy and Pediatric Cardiology.

[4] Does not add to total due to inconsistency in Administrative Medicine Specialty.

[5] Less than 0.05.

*It should be noted that this figure does not include all former Osteopaths who received M.D. degrees after the merger. This is due to the fact that not all reports to the A.M.A. from these physicians were received in time to be included in the February tabulations. Hence, a discrepancy exists between the estimates in Table 2 and the increase indicated in the text of this report. The percentage breakdown by specialties shown in the table, however, should generally reflect those in which the former Osteopaths are engaged.

evident in Laboratory Medicine, as mentioned earlier. These tables, therefore, cannot easily be compared to those in a compendium published earlier by the California Medical Association entitled "Characteristics of Physicians in California, Spring 1961" nor with the article which appeared in the November, 1962, issue of CALIFORNIA MEDICINE. This incomparability is likewise true within the medical specialties, which have in some cases been regrouped by A.M.A. since earlier reports were published.

California Medical Association, 693 Sutter Street, San Francisco.

LETTERS *to the Editor*

A Program for Private Insurance With Governmental Backing

Increasing numbers of physicians are coming to realize that a change in their billing habits has been occurring, coupled with a change in their method of pricing their services. The long era of "Robin Hoodism" is slipping away. In its stead the era of the standard fee determined through such means as the relative value scales is arising.

The majority vote of the people still dominates our government and the physicians must abide by the dictates of that majority vote. It is mandatory, then, to study what this majority vote is asking for its health problems. Basically it often appears to be a desire by the individual to have his health needs prepaid so that he will be under no financial obligation when seeking medical care. Also the individual desires to feel that he has bought medical care which is as good as any other man can buy.

Insurance programs have come a long way toward meeting the desire for prepayment. With a little education and clarification, these programs can provide the individual with all the medical care for which he is willing and able to pay. But to buy medical care which the individual construes to be equal to all, something more than the programs of most of the present insurance plans is needed. This boils down to two largely unsolved problems: quality control and financial ability.

At present the best programs for quality control lie in the Medical Foundation programs and in some types of Blue Shield "usual fee" plans. Their quality controls provide the advantages of being conducted by physicians, positively, immediately, and in every case. This type of control definitely is superior to control by lay personnel with sporadic delayed referral to physicians' committees. Widespread use of the Foundation type of quality control might well solve the problem of good quality control. Certainly the individual is not going to get good quality control through a government agency.

This leaves the everlasting problem of ability to pay. Here is where the medical profession needs to offer a solution, and offer it quickly before the dictates of the majority vote set up some intolerable Saskatchewanian plan. Therefore I would like to propose for your consideration the plan which should be capable of working to the satisfaction of the most people. While maintaining high standards of medical practice with a minimum of governmental interference this plan allows the legislators and political manipulators to follow the dictates of their constituents in the determination of the Robin Hood elements and means-testing connected with the ability to pay. Also it could assure the physician a fair return for his enterprise.

This program for private insurance with governmental backing would require *all* of the following five features in order to operate properly:

1. A set of minimum coverage requirements to be afforded in the basic service insurance program. These could be set up along the lines of the minimum requirements adhered to in most of the Foundation plans.

2. An indemnity plan to cover expenses such as may occur over and above those covered in the basic service program when there is a prolonged or catastrophic disability.

3. Payment of the premium for the insurance in numbers 1 and 2 by the person, the agent of his employer, union, trust, or other group, or a welfare agency, either private or governmental. At the annual income tax accounting these premiums would be declared to the revenue collectors along with the other income tax declarations. Then the individual could be entitled to a refund of all, part or none of the premium according to the government's current Robin Hood Ratio. The government could obtain the monies for this Robin Hood distribution by the usual methods of increasing the Social Security contributions, raising any of the other tax rates or raising the debt limit. Destitute persons under a welfare plan could continue with their present medical care or have their premiums paid by and refunded to their welfare agency.

4. Quality control of a direct, continuous type administered by physicians. The mechanism for this exists in the current Medical Foundations and in a few Blue Shield programs. Where it does not exist, it would have to be established.

5. Those immortal documents, the Relative Value Studies, would be the basis for the physicians' fees. Each state could maintain its own relative value scale. Continuation of the present astute revisions

by physicians' committees would be essential and would have to remain free of pressures from outside the profession. The conversion factor would be set up on the basis of the prevailing local standard at the start. This would be modified annually in proportion to the movements of the Consumers Price Index of the Bureau of Labor Statistics. Some local considerations may be used sometimes to modify the factor—such as the need to attract doctors in some areas.

A program with all of the foregoing features could be instituted without a major new government bureau. The Internal Revenuers could handle the tax side with the Martinsburg Monster or its ilk. The Foundation programs and their controls would have to be more widespread, but there appears to be a need and a desire for this anyway. The protection of the physicians' income—a vital factor indeed—would be provided if all of the factors in No. 5 are required by law and followed conscientiously. This program would remove the Robin Hood practices from most of the physicians' offices—but then it appears that the majority vote of the democratic people of the United States is aiming to do that one way or another before long.

E. Kenneth Smith, M.D.
Box 973
Eureka, California

Funds Needed for Services To Patients

I read with great interest your report on the service needs of some cancer patients in California published in the March issue of California Medicine. Those of us who are on the service end in the medical programs, whether they be for children or adults, are very aware of the lack of funds to meet people's urgent needs. It would seem that in the field of childhood handicaps the needs ought to be met, but this is not true. Even though children are utilized for fund-collecting purposes and in general the public believes that when they give to the fund they are helping to meet the needs of these individuals, the actual fact is that the majority of funds do very very little indeed to help patients directly. As an example I have recently reviewed the problem in a child who has had open heart surgery. This youngster, even though his heart has been mended, is not going to be an athlete on the one hand, and on the other, as so many children who have suffered a severe congenital anomaly he is not on the upper rung of the intellectual ladder. This child therefore and his family are in need of counseling and long-term planning in order to place this boy where he can function satisfactorily. The cardiac funds, like the cancer funds, are given to research, education, public relations and hidden under any other name so that they can be collected but practically nothing goes to direct service. As doctors I think we should demand that a certain percentage of all funds collected should go to direct service. If literature is reviewed at all, it is apparent that funds for research have skyrocketed and are now often being utilized by people who are looking for an easy way to get a salary rather than for what they can produce in the way of profitable research. Furthermore, what good is knowledge gained by research when it cannot be applied to the aid of the patient? The very people who speak the loudest for private enterprise and against State medicine are driving service programs to ask State funds for help to meet these urgent needs.

Sincerely,

H. E. Thelander, M.D.
San Francisco

A Letter from the Forty First

The following note was written in reply to a questionnaire by which the California Medical Association sought to learn what physicians who attended the recent Annual Session thought of the meeting.

The meeting was excellent and I was satisfied throughout.

What appealed to me most was the conduct of House of Delegates business and orderly caucuses, minimum of hassel and orderly resolution of issues after discussion.

I am one of the Forty First and I was very favorably impressed. I have been to six of my previous national (A.O.A.) conventions and 22 state association conventions (C.O.A.). I am not a novice—but this is my first C.M.A. meeting. I was well satisfied and I feel that I have gained much from the house activities on my first trip. I shall look forward to future conventions. This is my 23rd year of practice in California but my first as an M.D., and in C.M.A. I certainly appreciate the courtesy shown to the Forty First and to me as an alternate and personally. I hope I am worthy of the reception given me. I personally know every one in the Forty First, and I know of no one who does not share my feelings. I am taking this opportunity to let the C.M.A. know in some measure how I feel. I sincerely hope we have a contribution to make to medicine in the state of California and to medicine throughout the United States. I have always believed in organized effort and particularly so as it applies to medicine. I was a member of the Bylaws and Constitution Committee that changed the entire blueprint of the C.O.A. to conform to that of the C.M.A. and A.M.A. I am well informed in the Constitution and Bylaws of both organizations. In those two documents there was little difference, except in name. The philosophy was there and it was the same in both groups. I am more convinced since this convention than before that it was right.

A. E. ANGELL, M.D.

"Wasting the Labors of the People"

I place economy among the first and most important virtues, and public debt as the greatest of dangers to be feared. To preserve our independence, we must not let our rulers load us with perpetual debt. We must make our choice between economy and liberty, or profusion and servitude. If we can prevent the government from wasting the labors of the people, under the pretense of caring for them, they will be happy.

—THOMAS JEFFERSON

NEWS & NOTES

NATIONAL · STATE · COUNTY

LOS ANGELES

Dr. Arnold L. Freed, Los Angeles, was elected president-elect of the California Tuberculosis and Health Association at the recent annual meeting of the Association in San Mateo. Dr. Freed is a past president of the Los Angeles County Tuberculosis and Health Association.

* * *

Dr. Monroe K. Ruch, Pasadena, was installed as president of the California Society of Plastic Surgeons at the annual convention of the organization held in Yosemite last month. **Dr. E. Horace Klabunde,** San Francisco, was elected president-elect, **Dr. Jerome R. Klingbeil,** Long Beach, vice-president, and **Dr. William J. Norris,** San Francisco, secretary-treasurer.

* * *

Dr. Rutherford T. Johnstone, Los Angeles, was visiting professor of medicine at Ohio State University College of Medicine during the last week in February.

Dr. Johnstone recently ended his tenure of office in the Council of Occupational Health of the American Medical Association. He had served for 16 years.

ORANGE

The Orange County Medical Association will begin a **new postgraduate program** on June 4 with a format timed at making every session a meaningful one both for general physicians and specialists, according to an announcement from the Association.

The first program in the new series, under the general title of "Advances in Medical Science," will include presentations by Linus Pauling, Ph.D., Nobel laureate and professor of chemistry, California Institute of Technology; Ray Owen, Ph.D., professor and chairman, department of biology, California Institute of Technology; Robert D. Tshirgi, Ph.D., M.D., professor of physiology and anatomy, U.C.L.A. School of Medicine; and Chauncey Leake, M.D., professor emeritus of pharmacology, Ohio State University College of Medicine.

Dr. Edward Shanbrom, chairman of the Medical Association's Postgraduate Committee said the program will begin at 2 p.m. and continue through the evening hours which otherwise would be devoted to the Association's regular monthly dinner meeting. The intent, Dr. Shanbrom said, is to make attendance as convenient as possible for every doctor in the Association.

SANTA CLARA

The Sir Henry Dale Medal, given by the Society for Endocrinology of Great Britain, has been awarded to **Dr. Philip E. Smith** of Stanford University School of Medicine. Dr. Smith, who is professor emeritus from the Columbia University College of Physicians and Surgeons, has been a research associate in anatomy at Stanford since 1956. The first American to be so honored, Dr. Smith is being given the award "in recognition of his outstanding and meritorious accomplishments as an investigator in the field of basic and clinical endocrinology."

Professor A. S. Parkes, a widely known authority on the reproductive system, came from Cambridge University, England, to make the award at a dinner held at the Pioneer Inn, Woodside, May 9.

SAN FRANCISCO

Among distinguished speakers who will present papers at the **American Gastroenterological Association** meeting in San Francisco, May 30-June 1, are the following from foreign countries:

Dr. J. N. Hunt, professor, Department of Physiology, Guy's Hospital, London.

Dr. Sheila Sherlock, professor of medicine, University of London, The Royal Free Hospital School of Medicine, London.

Dr. Margot Shiner, Central Middlesex Hospital, London.

Dr. Ian Wood, The Walter and Eliza Hall Institute of Medical Research, Royal Melbourne Hospital, Melbourne, Australia.

GENERAL

A pledge of support for the California Department of Mental Hygiene's long range plan for caring for the mentally ill in their own communities insofar as possible was made by the California Medical Association to the Department's new director, **Dr. Daniel Lieberman.** Upon Dr. Lieberman's appointment to the post vacated by the resignation of Dr. Daniel Blain, Dr. Samuel R. Sherman, president of the C.M.A., sent a message to the new director saying, "We are most happy that you have been chosen to carry on this program, and I know I speak for all of our officials in pledging to you our utmost in cooperation."

The C.M.A. approves the plan for decentralizing care of the mentally ill in California which provides for establishment and maintenance of mental health centers and the use of community resources. The Association considers the program preferable to institutionalizing large numbers of patients.

* * *

Three physicians serving as residents in California hospitals were among 14 who received $1,000 Mead Johnson **residency scholarships,** according to an announcement by the American College of Physicians. They are **Dr. Charles L. Murray,** Stanford Medical Center, Palo Alto; **Dr. Pulak N. Sanyal,** Los Angeles County General Hospital; and **Dr. John A. Sarconi,** Harbor General Hospital, Torrance.

* * *

Provisional data on **inoculation for poliomyelitis with the Sabin oral vaccine,** as compiled by the Bureau of Communicable Diseases of the State Department of Public Health, show wide differences between counties in the proportion of the total population taking the vaccine.

Based on estimates from local medical societies, health departments and military bases, the tentative data as reported by the Bureau (000 omitted from number receiving vaccine) were as follows:

County	Type I Number	Type I % of Pop.	Type II Number	Type II % of Pop.	Type III Number	Type III % of Pop.
North Coast						
Humboldt-Del Norte	46	36	49	39	49	39
Lake	11	76	11	76	9	60
Mendocino	36	73	35	71	23	47
Sacramento Valley						
Butte	59	64	58	63	....	....
Colusa	....	....	....	....	....	....
Glenn	12	66	12	65	....	....
Sacramento	403	71	383	68	314	55
Sutter-Yuba	51	66	45	59	44	57
Tehama	19	69	18	67	12	47
Yolo	54	73	48	66	39	52
Mountain						
Alpine	....	....	....	....	....	....
Amador	6	62	6	61	3	33
Calaveras	9	82	10	90	6	60
El Dorado	20	57	17	50	9	27
Inyo	7	64	7	65	6	54
Lassen	7	53	11	80	....	....
Mariposa	3	71	3	61	3	65
Modoc	3	46	3	49	....	....
Mono	1	38	1	32	....	....
Nevada-Placer	54	63	52	61	37	44
Plumas	7	68	7	63	....	....
Shasta-Trinity	45	59	42	55	....	....
Sierra	1	71	1	67	....	....
Siskiyou	16	50	16	48	....	....
Tuolumne	10	69	11	75	7	51
San Francisco Bay						
Alameda	727	77	684	72	588	52
Contra Costa	363	81	346	77	290	65
Marin	132	80	131	79	111	67
Napa	54	77	54	78	42	60
San Francisco	563	76	479	64	392	53
San Mateo	387	79	380	77	308	63
Santa Clara	615	81	598	79	498	66
Solano	104	72	107	74	81	56
Sonoma	138	87	140	88	128	81
So.-Central Coast						
Monterey	146	71	169	82	137	66
San Benito	12	79	11	74	9	59
San Luis Obispo	58	64	55	61	37	42
Santa Barbara	116	54	121	57	120	56
Santa Cruz	73	79	67	72	58	63
San Joaquin Valley						
Fresno	250	64	267	69	274	71
Kern	192	63	176	58	202	66
Kings	30	51	30	51	29	49
Madera	21	52	18	45	21	52
Merced	50	53	45	48	42	44
San Joaquin	196	75	199	76	156	60
Stanislaus	102	62	100	61	85	52
Tulare	83	48	84	48	64	37
L. A. Metrop.						
Los Angeles	2,907	45	2,753	43	1,989	31
Orange	536	61	498	57	386	44
Ventura	154	65	145	62	119	51
Southeast						
Imperial	36	47	36	47	25	33
Reverside	204	58	194	55	164	47
San Bernardino	297	54	301	55	308	56
San Diego	661	57	658	56	429	37

EDUCATION NOTICES

COMMITTEE ON CONTINUING MEDICAL EDUCATION

THIS BULLETIN of the dates of continuing education programs and the meetings of various medical organizations in California is supplied by the Committee on Continuing Medical Education of the California Medical Association. In order that they may be listed here, please send communications relating to your future meetings or postgraduate courses to Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 2.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

May 25—**Aging in a Democracy.** Saturday. 8 hours. $2.50.

May 26—**Trends in Geriatric Therapy.** Sunday. 8 hours.*

June 14-15—**Pediatric Ophthalmology.** Friday-Saturday. 18 hours.*

June 21-22—**Diseases of the Kidney.** Friday-Saturday. 18 hours.*

June 24-28—**Functional Bracing of the Upper Extremities.** Monday-Friday. 40 hours. $125.

June 28-29—**Minor Surgery.** Friday-Saturday. 12 hours.*

July 3-7—**Advanced Seminars for General Practitioners.** At University of California Residential Conference Center, Lake Arrowhead. Fee includes room and meals for 4 days. Wednesday-Sunday. 20 hours. $150.

July 10-14—**Advanced Seminars in Pediatrics.** At University of California Residential Conference Center, Lake Arrowhead. Fee includes room and meals for 4 days. Wednesday-Sunday. 20 hours. $150.

Aug. 4-7—**Advanced Seminars in Urology.** At University of California Residential Conference Center, Lake Arrowhead. Fee includes room and meals for 3 days. Sunday-Wednesday. 15 hours. $137.50.

Aug. 7-9—**Anesthesiology.** Wednesday-Friday. 18 hours.*

Aug. 7-11—**Advanced Seminars in Internal Medicine.** At University of California Residential Conference Center, Lake Arrowhead. Fee includes room and meals for 4 days. Wednesday-Sunday. 20 hours. $150.

Aug. 23-24—**The Shoulder—Anatomy, Pathology, and Surgery.** Friday-Saturday. 12 hours.*

Sept. 5-7—**The Adolescent.** Thursday-Saturday. 18 hours.*

Sept. 12-Dec. 5—**Teaching Clinics.** Thursday evenings. 24 hours.*

Oct. 16-April 15, 1964—**Basic Science Course in Ophthalmology.** Wednesday evenings.*†

Dates by Arrangement—**Clinical Traineeship**—Anatomy, Anesthesia, Dermatology, Pediatrics, Radioisotopes, Urology: 2 weeks, $150; 4 weeks, $250. Minimum period, 2 weeks.

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*Fee to be announced.

†Hours to be announced.

For information on courses for physicians or ancillary personnel, contact: Thomas H. Sternberg, M.D., Assistant Dean and Head, Department of Continuing Education in Medicine and Health Sciences, U.C.L.A. Medical Center, Los Angeles 24, 478-9711, Ext. 2114.

LOMA LINDA UNIVERSITY

June 24-28—**Fetal Heart Monitoring.** White Memorial Hospital. Monday-Friday, 9:00 a.m.-4:00 p.m.

As Arranged—**Traineeships** in clinical and other departments are available by arrangement with department chairmen of the Postgraduate Division. 80 hours minimum.

Anesthesia, 6 months. 250-300 hours. $350.

Pulmonary Diseases—can be arranged.

Continuously—**Illustrated Medical Lectures:** 30-minute tape recordings and accompanying 35-mm filmstrip, 50 to 80 full-color pictures for screen, hand or desk viewer. Available individually or by subscription. 12 or 36 titles per year, all titles produced in one year in any chosen specialty. Projectors and viewers included in subscription plans. Contact: Loma Linda University, Illustrated Medical Lectures, Los Angeles 33.

For course information contact: W. F. Norwood, Ph.D., Assistant Dean and Chairman, Division of Continuing Education, Loma Linda University School of Medicine, 1720 Brooklyn Ave., Los Angeles 33, ANgelus 9-7241, Ext. 214.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

May 16-17—**Proctology.** Thursday-Friday. 14 hours. $50.

May 18-19—**Orthopedic Problems in Childhood.** Saturday-Sunday. 14 hours. $40.

May 25-26—**Law in the Practice of Medicine.** Saturday-Sunday. 14-hours. $40.

May 27-29—**Recent Advances in Gastroenterology.** Monday-Wednesday. 18 hours. American Gastroenterological Association members, $35. Non-members, $50. Closed-circuit TV viewing, $25.

July 3-7—**Advanced Seminars in Dermatology.** California Alumni Association. Tahoe Alumni Center, Lake Tahoe. Wednesday-Sunday. 14 hours. $75. (Limited to Dermatologists.)

Sept. 9-13—**Internal Medicine.** Monday-Friday.*†

Sept. 18-Dec. 4—**Practical Psychotherapy.** Langley Porter Neuropsychiatric Institute. Wednesday. 60 hours. $25.

Sept. 20-21—**Clinical Pediatrics: Renal Disease and Electrolyte Imbalance.** Friday-Saturday.*†

Sept. 24-Nov. 5—**Psychiatry for General Practice.** Sonoma State Hospital. Tuesdays.*†

Sept. 27-29—**Current Problems in Surgery.** Franklin Hospital, San Francisco.*†

Oct. 4-6—**Progress in Urology.** Friday-Sunday.*†

Oct. 9-12—**Retinal Detachment Symposium.** Wednesday-Saturday.*†

Oct. 24-26—**The Preclinical Basis of Gynecology.** Thursday-Saturday.*†

Nov. 1-2—**Graphic Methods in Cardiology.** Friday-Saturday.*†

Nov. 2—**Pediatrics.** Children's Hospital, San Francisco. 7 hours. $15.

Nov. 9-11—**Mental Retardation.** Saturday-Monday.*†

Nov. 11-15—**Expanded Surgery of Nasal Septum.** Monday-Friday.*†

Continuously—Courses presented by special arrangement: Principles and Clinical Uses of Radioisotopes (full time for one to three months), Anesthesiology (full time for one to three weeks).

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*Fee to be announced.

†Hours to be announced.

For information on courses for physicians or ancillary personnel, contact: Seymour M. Farber, M.D., Assistant Dean, Dept. of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Room 565-U, San Francisco 22, MOntrose 4-3600, Ext. 179.

UNIVERSITY OF SOUTHERN CALIFORNIA

June 1-30—**Medical Centers of Europe.** London, Copenhagen, Stockholm and Paris. Tuition: $250.

July 31-Aug. 16—**Sixth Annual Refresher Course in Hawaii,** and on board the S.S. *Lurline.* (Air travel also possible.) Tuition: Island portion, $100; Island and ship portions, $125.

Continuously—**Basic Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues $100. Physicians may register at any time.

Continuously—**Advanced Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues $85. Physicians may register at any time.

For course information contact: Phil R. Manning, M.D., Assoc. Dean, Postgraduate Division, USC School of Medicine, 2025 Zonal Ave., Los Angeles 33, CApital 5-1511, Ext. 9.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE INSTITUTES—1963

May 30-31—**San Joaquin Valley Counties, Infectious Diseases, "The Depressed Patient," The Common Problems of Adolescence, Office Dermatology, Renal Disease and New Concepts of Antibiotic Drugs and Immunization,** in cooperation with Stanford University School of Medicine, Ahwahnee Hotel, Yosemite. Chairman: Thomas J. Fuson, M.D., 2944 Fresno Street, Fresno.

June 27-29—**Sacramento Valley Counties,** in cooperation with University of California School of Medicine, San Francisco. Harvey's Wagon Wheel, Lake Tahoe. Chairman: A. John Quinn, M.D., 2600 Capitol Avenue, Suite 312, Sacramento 16.

For information regarding Postgraduate Circuit Courses and Postgraduate Institutes, contact Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 2. PRospect 6-9400, Ext. 68.

AUDIO-DIGEST FOUNDATION

Continuously—**Audio-Digest Foundation** (a non-profit subsidiary of the California Medical Association) announces the imminent commencement of a new bi-weekly, tape-recorded subscription service, *Audio-Digest Ophthalmology.* Like the Foundation's six services already established (in General Practice, Surgery, Internal Medicine, Obstetrics-Gynecology, Pediatrics, and Anesthesiology) the newest program will offer on-the-spot recorded coverage of leading national meetings and authoritative surveys of the current literature.

A Catalog of Classics, offering outstanding lectures and panel discussions in all areas of medical practice, is also available. For the Catalog and further subscription information, write: Mr. Claron L. Oakley, Editor, 619 South Westlake Avenue, Los Angeles 57.

Medical Dates Bulletin

MAY MEETINGS

May 16-17—**Nevada Academy of General Practice** Fifth Annual Assembly. Sparks (E. Reno), Nevada. Contact: Frank C. Stokes, M.D., convention chairman, 1845 Prater Way, Sparks, Nevada.

May 17-19—**California Heart Association** Annual Meeting and Scientific Sessions. Santa Barbara Biltmore Hotel, Santa Barbara. Contact: Clayton H. Klakeg, M.D., chairman, Annual Meeting Committee, California Heart Association, 1370 Mission Street, San Francisco 8.

May 20-23—**American Proctologic Society.** St. Francis Hotel, San Francisco. Contact: Norman D. Nigro, M.D., secretary, 7815 East Jefferson, Detroit 14, Michigan.

May 22—**Memorial Hospital of Long Beach,** Fifth Annual Medical Staff Symposium. Memorial Hospital, Long Beach. Contact: George X. Trimble, M.D., symposium secretary, 2801 Atlantic Avenue, Long Beach.

May 28-30—**American Public Health Association, Western Branch,** 30th Annual Meeting. Hotel Westward Ho, Phoenix, Arizona. Contact: Mr. Robert Mytinger, director, 693 Sutter Street, San Francisco 2.

May 29—**American Society for Gastrointestinal Endoscopy.** Fairmont Hotel, San Francisco. Contact: Frank B. McGlone, secretary-treasurer, 701 East Colfax, Denver 3, Colorado.

May 30-June 1—**American Gastroenterological Association.** Fairmont Hotel, San Francisco. Contact: Wade Volwiler, M.D., Department of Medicine, University of Washington, Seattle.

JUNE MEETINGS

June 1—**General Hospital Ventura County,** Postgraduate Seminar. Contact: R. A. Blossom, M.D., director of laboratories, 3291 Loma Vista Road, Ventura.

June 5—**Los Angeles County Heart Association** Annual Meeting and Conference. Statler Hilton Hotel, Los Angeles. Wednesday, 8:30 a.m.-2:00 p.m. Contact: Chauncey Alexander, executive director, 2405 West 8th Street, Los Angeles 57.

June 9—**Southern California Chapter of American Academy of Pediatrics** Annual Meeting. Statler Hotel, Los Angeles, 10:00 a.m. Contact: Stephen Royce, M.D., Childrens Clinic, 504 South Sierra Madre Blvd., Pasadena.

SEPTEMBER MEETINGS

Sept. 12-14—**Saint John's Hospital** Postgraduate Assembly. Saint John's Hospital, Santa Monica. Thursday-Saturday. Contact: John C. Eagan, M.D., director, Saint John's Hospital, 1328 Twenty-second Street, Santa Monica.

Sept. 25—**National Kidney Disease Foundation, Southern California Chapter,** Third Annual Professional Symposium on Kidney Disease. Statler Hilton Hotel, Los Angeles. Wednesday. 9:00 a.m.-5:00 p.m. Contact: Mrs. Jean Gordon, administrative assistant, 5880 San Vicente Boulevard, Los Angeles 19.

Sept. 25-26—**American Medical Association** Congress on Occupational Health. Jack Tar Hotel, San Francisco. Contact: Henry F. Howe, M.D., secretary, Council on Occupational Health, AMA, 535 North Dearborn Street, Chicago, Illinois.

OCTOBER MEETINGS

Oct. 2-4—**San Francisco Heart Association** 33rd Annual Postgraduate Symposium on Heart Disease. St. Francis Hotel, San Francisco. Wednesday-Friday. 9:00 a.m.-5:00 p.m. Contact: Gene C. Taylor, Executive Director, 259 Geary Street, San Francisco 2.

Oct. 3-6—**Pacific Coast Fertility Society.** Flamingo Hotel, Las Vegas, Nevada. Contact: Julius Winer, M.D., secretary, 9915 Santa Monica Blvd., Beverly Hills.

Oct. 4-5—**San Diego County Heart Association** 13th Annual Professional Symposium on Heart Disease. Town and Country Hotel, Mission Valley Hotel Circle. Friday, 1:00 p.m.-5:00 p.m.; Saturday 9:00 a.m.-5:00 p.m. Contact: Mr. O. M. Avison, executive director, 2545 Fourth Avenue, San Diego 3.

Oct. 17-20—**Academy of Psychosomatic Medicine.** Sheraton-Palace Hotel, San Francisco. Contact: Klaus Berblinger, M.D., program chairman, Langley Porter Neuropsychiatric Institute, University of California School of Medicine, San Francisco 22.

Oct. 18-19—**Kaiser Foundation Hospitals'** Seventh Annual Symposium. Fairmont Hotel, San Francisco. Friday, 7:30 p.m.-9:30 p.m., Saturday, 9:00 a.m.-5:00 p.m. Contact: Martin A. Shearn, M.D., Director of Medical Education, Kaiser Foundation Hospital, Oakland 11.

Oct. 20-23—**California Academy of General Practice** Annual Scientific Assembly. El Cortez Hotel, San Diego. Contact: Mr. William W. Rogers, executive secretary, 9 First Street, Room 900, San Francisco 5.

Oct. 23-24—**American Heart Association** Council on Arteriosclerosis. Annual Meeting. Biltmore Hotel, Los Angeles. Non members $15. Contact: Richard Hurley, M.D., 44 East 23rd Street, New York 10, N. Y.

Oct. 24-25—**American Association for the Surgery of Trauma.** Mark Hopkins Hotel, San Francisco. Contact: William T. Fitts, Jr., M.D., secretary, 3400 Spruce Street, Philadelphia, Pennsylvania.

Oct. 25-27—**American Heart Association** Annual Scientific Sessions. Biltmore Hotel, Los Angeles. Members, medical students, house officers, research fellows, graduate students, U.S. Armed Forces—Free. Others, $15.

Oct. 27-Nov. 1—**American College of Surgeons** Clinical Congress. San Francisco. Contact: John Paul North, M.D., Director, American College of Surgeons, 40 East Erie, Chicago 11, Illinois.

NOVEMBER MEETINGS

Nov. 1—**Kern County General Hospital** Annual Postgraduate Conference. Bakersfield. Contact: George A. Paulsen, M.D., chairman, Kern County General Hospital, 1830 Flower Street, Bakersfield.

Nov. 1-3—**California Society of Internal Medicine** Annual Meeting. El Mirador Hotel, Palm Springs. Contact: Robert L. Paver, M.D., secretary-treasurer, 350 Post Street, San Francisco.

Nov. 1-3—**Southern California Psychiatric Society** Annual Fall Convention. Vacation Village Hotel, San Diego. 8:30 a.m. Contact: Ralph M. Obler, M.D., chairman arrangements committee, 427 North Camden Drive, Beverly Hills.

Nov. 5-13—**Ninth Congress of the Pan-Pacific Surgical Association.** Honolulu, Hawaii. Contact: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii.

Nov. 8-10—**Forty First Medical Society** First Annual Convention. Riviera Hotel, Palm Springs. Contact: Mr. Don E. Rosenthal, Administrative Director, 4775 Santa Monica Boulevard, Los Angeles 29, California.

Nov. 13—**American College of Physicians Southern California Region,** Annual Basic Science Lecture. Statler Hilton Hotel, Los Angeles. 6:30 p.m. Contact: George C. Griffith, M.D., 1136 West 6th Street, Los Angeles 17.

Nov. 13-Dec. 10—**First Pan-Pacific Mobile Educational Lecture Seminar.** In New Zealand, Australia, Thailand, the Philippines, Hong Kong and Japan. Contact: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii.

ARAMINE may make the difference between death and survival... because you can treat shock on the scene

in traumatic shock: ARAMINE® metaraminol bitartrate buys essential time when shock follows brain damage or severe hemorrhage. In grave emergencies, direct intravenous injection brings immediate pressor response, improves renal plasma flow, cerebral and coronary blood flow...with little chance of tissue irritation or necrosis.

in cardiogenic shock: ARAMINE has a smooth predictable vasopressor effect (no apparent vasodilating component) and a direct myocardial-stimulating effect. It can be given intramuscularly, subcutaneously, or by direct intravenous injection, thus averting the use of extra fluids contraindicated in some gravely ill patients.

in anaphylactic shock: ARAMINE is the general purpose vasopressor in shock caused by medications or insect stings or in shock of unknown etiology. One intramuscular injection of ARAMINE will usually maintain adequate blood pressure until the emergency can be contained.

Brief Summary: Indications: Acute hypotension. **Side Effects, Precautions, and Contraindications:** Avoid areas unsuitable for injection. Not recommended with cyclopropane or halothane anesthesia. Avoid excessive blood pressure response. Use with caution in heart or thyroid disease, high blood pressure, diabetes. **Before prescribing or administering, read product circular with package or available on request.**

Supplied: In 1-cc. ampuls and 10-cc. vials, each cc. containing 10 mg. metaraminol present as the bitartrate and 4.4 mg. sodium chloride in water for injection. Preservatives: 0.15% methylparaben, 0.02% propylparaben, and 0.2% sodium bisulfite.

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Infant's Breathing Problem Linked to Cord Clamping

Clamping the umbilical cord before a newborn infant has drawn his second breath may be a factor in the development of possibly fatal breathing difficulty, a University of California study showed.

Difficulty in breathing and incomplete expansion of the lungs at birth, the so-called "respiratory distress syndrome," accounts for about 27 per cent of deaths during the first seven days of life.

In the April 6 *Journal of the American Medical Association,* Drs. Arthur J. Moss and Edward R. Duffie Jr., Los Angeles, and Leonard Fagan, now of St. Louis, report preliminary results of early and late clamping among 124 infants.

All of the infants were either premature, delivered by cesarean section or had diabetic mothers, the pediatricians said. The syndrome is more common under these circumstances.

Nineteen of 41 premature infants in whom the cord was clamped before they drew their second breath showed moderate to severe distress, they said, whereas only 6 of 52 premature infants in whom the cord was clamped after they drew a second breath were affected. Among infants born by cesarean section or of diabetic mothers, 2 of 10 clamped early demonstrated respiratory distress while none of the 21 clamped late had any evidence of this problem, they said.

Labored breathing in newborns may arise from a variety of conditions, the researchers said, but causes relating to the lungs can be associated with clamping the umbilical cord before the infant's lungs are fully expanded.

Before birth, the baby's oxygen is supplied by the mother by means of the placenta, they said. But as soon as the baby begins to breathe, they said, increasing quantities of blood circulate through his lungs and less blood is diverted through the cord to the placenta.

A gradual change-over from placental to pulmonary oxygen is probably accomplished with only minor changes in overall blood flow, pressure and resistance, they said. But if the umbilical cord is clamped before the lungs have expanded fully, they said, there will be a sudden overall rise in blood pressure which could damage the lungs or other organs.

A.M.A. Annual Meeting to Present Top Program in Atlantic City

The 112th annual meeting of the American Medical Association will be held June 16-20 in Atlantic City.

An attendance of 15,000 physicians is anticipated.

A.M.A. President George Fister, M.D., said that with "better transportation facilities to Atlantic City

1 2 3 4
clinical studies repeat...

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1 "significant hearing improvement" occurred with Arlidin in 32 of 75 patients with recent onset hearing impairment due to labyrinthine artery ischemia.

Rubin, W. and Anderson, J. R.: Angiology 9:256, 1958.

3 Arlidin "appears to be one of the most satisfactory [vasodilators], having the advantages of minimal side effects, being well tolerated and possessing a sustained action" in improving circulation of the inner ear.

Seymour, J. C.: Laryngology & Otology 74:133, 1960.

and more up-to-date room accommodations, attendance at the '63 meeting should be high."

"Since we last met there," Dr. Fister said, "more than 4,000 new motel rooms have been provided. The auditorium has been renovated, including new escalators and additional floor space. The convention bureau has arranged for a new type of air-land shuttle service between Philadelphia and Atlantic City."

A new feature of the program will be a session on "Physician and Clergy Meet in Patient Care," in which leading clergymen and physicians will discuss their common problems in working with patients. Milford O. Rouse, M.D., of Dallas, is chairman.

The Multiple Discipline Research Forum will be presented again, in which more than 200 short papers will be presented, reporting on original investigation of fundamental problems in medicine. Chairman is Edwin H. Ellison, M.D., of Milwaukee.

The scientific program will include eight general scientific sessions, dealing with strokes, genetics, cancer, chemotherapy, peptic ulcer, myocardial infarction, backaches, obesity and venereal disease.

The session will mark the 17th time that the A.M.A. has met in Atantic City since 1900. At the last meeting there, in 1959, the total attendance was 32,882, including 13,143 physicians.

David B. Allman, M.D., who practiced surgery in Atlantic City for 35 years and is an A.M.A. past president (1957-58), is honorary chairman of arrangements. Local chairman is Charles Hyman, M.D.

Scientific sessions of the meeting will be held in the City Auditorium, on the boardwalk facing the Atlantic Ocean. Scientific meeting rooms and industrial exhibit will be on the boardwalk level of the Auditorium. Scientific exhibits will be on the Auditorium's lower level. A few scientific sessions will be held in hotels near the auditorium.

The Traymore Hotel and the new Colony Motel will be joint headquarters for the meeting. House of Delegates sessions will be held at the Traymore. Woman's Auxiliary headquarters will be the Chalfonte-Haddon Hall Hotel.

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2

vascular insufficiency
of the labyrinth is an important
etiologic factor in sudden
perceptive deafness . . .
"vasodilators [Arlidin] are
of considerable value."

Wilmot, T. J. and Seymour, J. C.:
Lancet 1:1098, 1960.

4

early cases of sudden
perceptive deafness should be treated
by immediate stellate block
"supplemented by the most effective
vasodilator drug [Arlidin] . . .
energetic measures to
retain blood supply to the inner
ear are imperative."

Wilmot, T. J.: J. Laryngology &
Otology 73:466, 1959.

in impaired hearing, tinnitus, vertigo . . .

when due to ischemia of the inner ear . . .

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brand of nylidrin hydrochloride N.F.

Clinical benefit in approximately 50% of cases of recent onset hearing loss treated with adequate vasodilator and other supportive therapy is also reported by Sheehy.

Sheehy, J. L.: Laryngoscope 70:885, 1960.

IMPORTANT: Before prescribing ARLIDIN the physician should be thoroughly familiar with general directions for its use including indications, dosage, precautions and contraindication. Write for complete detailed literature.

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Formula — Each scored yellow Percodan* Tablet contains 4.50 mg. dihydrohydroxycodeinone HCl (Warning: May be habit-forming), 0.38 dihydrohydroxycodeinone terephthalate (Warning: May be habit-forming), 0.38 mg. homatropine terephthalate, 224 mg. acetylsalicylic acid, 160 mg. acetophenetidin, and 32 mg. caffeine. **Also available:** Percodan®-Demi, containing the complete Percodan formula but with only half the amount of salts of dihydrohydroxycodeinone and homatropine. Both products are on oral Rx in all states where laws permit. **Average Adult Dose**—1 tablet every 6 hours. **Side Effects and Contraindications**—Although generally well tolerated, Percodan may cause nausea, emesis, or constipation in some patients. Percodan should be used with caution in patients with known idiosyncrasies to acetylsalicylic acid or acetophenetidin and in those with blood dyscrasias. *Literature on request.* **ENDO LABORATORIES Richmond Hill 18, New York**

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- *without* appreciable incidence of hypotension or tachycardia[2,3]
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Dosage and administration: Oral—10 to 20 mg. (1 to 2 tablets) t.i.d. or q.i.d.; I.M.—5 to 10 mg. b.i.d. or t.i.d. *Contraindications:* There are no known contraindications to oral administration of VASODĪLAN (Isoxsuprine HCl) in recommended doses. *Cautions:* Do not give immediately postpartum or in the presence of arterial bleeding. Parenteral administration not recommended in the presence of hypotension or tachycardia. Avoid intramuscular doses above 10 mg. *Side effects:* Occasional palpitation and dizziness usually controllable by dosage reduction. Brief hypotension or tachycardia may occur with intramuscular doses of 10 mg. or more.

For complete details on indications, dosage, administration, and clinical background, see the brochure of this product available on request from Mead Johnson Laboratories, Evansville 21, Indiana.

References: (1) Clarkson, I. S., and Le Pere, D. M.: Angiology *11*:190-192 (June) 1960. (2) Kaindl, F.; Samuels, S. S.; Selman, D., and Shaftel, H.: Angiology *10*:185-192 (Aug.) 1959. (3) Kaindl, F.; Pärtan, J., and Polsterer, P.: Wien. klin. Wchnschr. *68*:186-191 (March 16) 1956. (4) Samuels, S. S., and Shaftel, H. E.: J.A.M.A. *171*:142-145 (Sept. 12) 1959. (5) Billiottet, J., and Ferrand, J.: Semaine méd. *34*:635-637 (May 20) 1958.

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How Much Sleep for a Good Night's Sleep?

The amount of sleep necessary for "a good night's sleep" varies from person to person but it's easy to tell the next day if one did get enough, according to Nathaniel Kleitman, Ph.D., Santa Monica, Calif.

Writing in the question and answer section of the March 16 *Journal of the American Medical Association,* Dr. Kleitman said the amount of sleep on which one can "get by" varies from person to person and probably from time to time but there is a minimum sleep requirement.

"A simple index that the minimum requirement has been met is one's ability to wake up spontaneously at the usual getting up time, as well as having freedom from drowsiness in the afternoon," he said.

Dr. Kleitman cited a study of the effect of increasing amounts of sleep on performance of various physical and mental tests the following afternoon between 3 and 5 p.m. when a person's efficiency is at its highest.

The study showed that performance improved sharply as the amount of sleep was increased from one to six hours, he said. However, he said, the rate of improvement was much smaller when the duration of sleep was increased to eight hours and there was no further improvement in performance as the length of sleep was extended to 10 hours.

Coffee and insomnia were discussed by Jack Arbit, Ph.D., Chicago, in answer to another question submitted to the *Journal.*

The effects of coffee depend upon the amount, the time elapsed after it is taken, the size of the individual, his physical condition and his psychological expectations, he said.

"The ingestion of one or two cups of coffee by an individual who is normally a coffee drinker is likely to have little effect upon either the objective indexes of restlessness during sleep (body movements) or subjective criteria such as the individual's rated depth of sleep," he said.

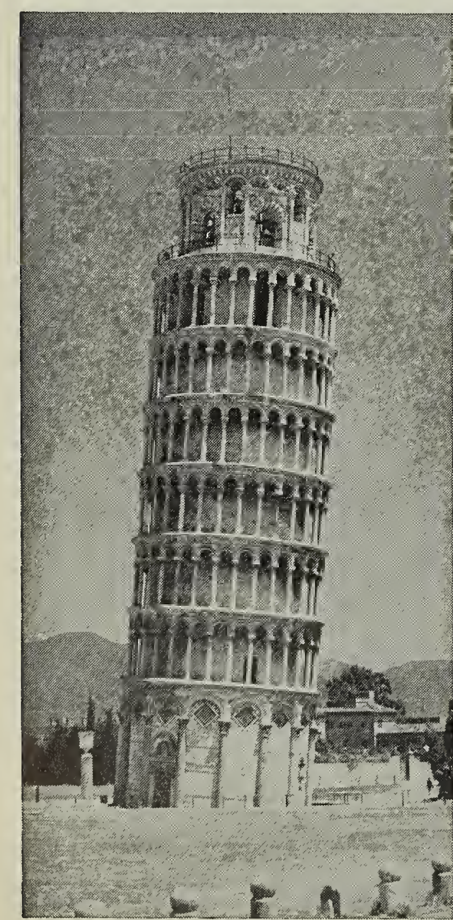
"The anxious, tense individual may actually find coffee a relaxant, and it would be expected that in these persons a cup of coffee might facilitate sleep. In the individual who drinks little or no coffee, even a relatively minimal amount would produce some feelings of insomnia under normal conditions; and this reaction might also be found in the confirmed coffee drinker after ingestion of large amounts."

Study Chromosomes in Mental Disease

The possibility that there is a genetic trait for schizophrenia was suggested by a study reported in the March 23 *Journal of the American Medical Association.*

Although no definite conclusion could be drawn, Drs. Theophile Raphael and Margery W. Shaw, University of Michigan Medical School, Ann Arbor,

(Continued on Page 56)



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1. *Methyltestorone-Thyroid in Treating Impotence,* A. S. Titeff, *General Practice, Vol. 25, No. 2, Feb., 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations,* L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism, August 1959.*

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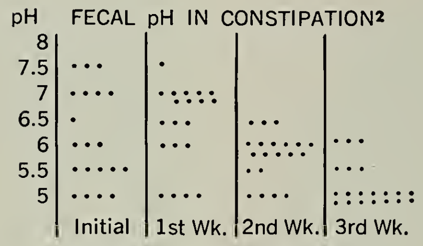

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Study Chromosomes in Mental Disease

(Continued from Page 52)

Mich., said their study suggests that abnormalities of the sex chromosomes are more frequent among schizophrenics than in the general population.

This finding, however, is open to two interpretations, the researchers pointed out. On one hand, they said, it could mean that persons with abnormal sex constitution have a greater tendency toward abnormal mental behavior. On the other hand, they said, it is possible that some other factor causes nonspecific chromosomal disorder and mental illness.

In recent years the cause of an increasing number of disorders has been clarified by the study of human chromosomes, the researchers said.

Several types of chromosomal abnormalities have been found to occur more frequently in individuals with mental deficiency than in the general population, they said. Since it has been suggested that in certain forms of mental illness there is an underlying genetic defect, they said, it seemed worthwhile to investigate the possibility that chromosomal abnormalities play a role in specific types of psychosis.

Chromosome analysis of 105 men and 105 women schizophrenics revealed one man and one woman with abnormalities of the sex chromosomes which are extremely rare in the general population.

The man was found to have three sex chromosomes, XXY, whereas the normal male has two, XY. The XXY configuration, known as Klinefelter's syndrome, is the cause of stunted growth and nondevelopment of certain male sex organs.

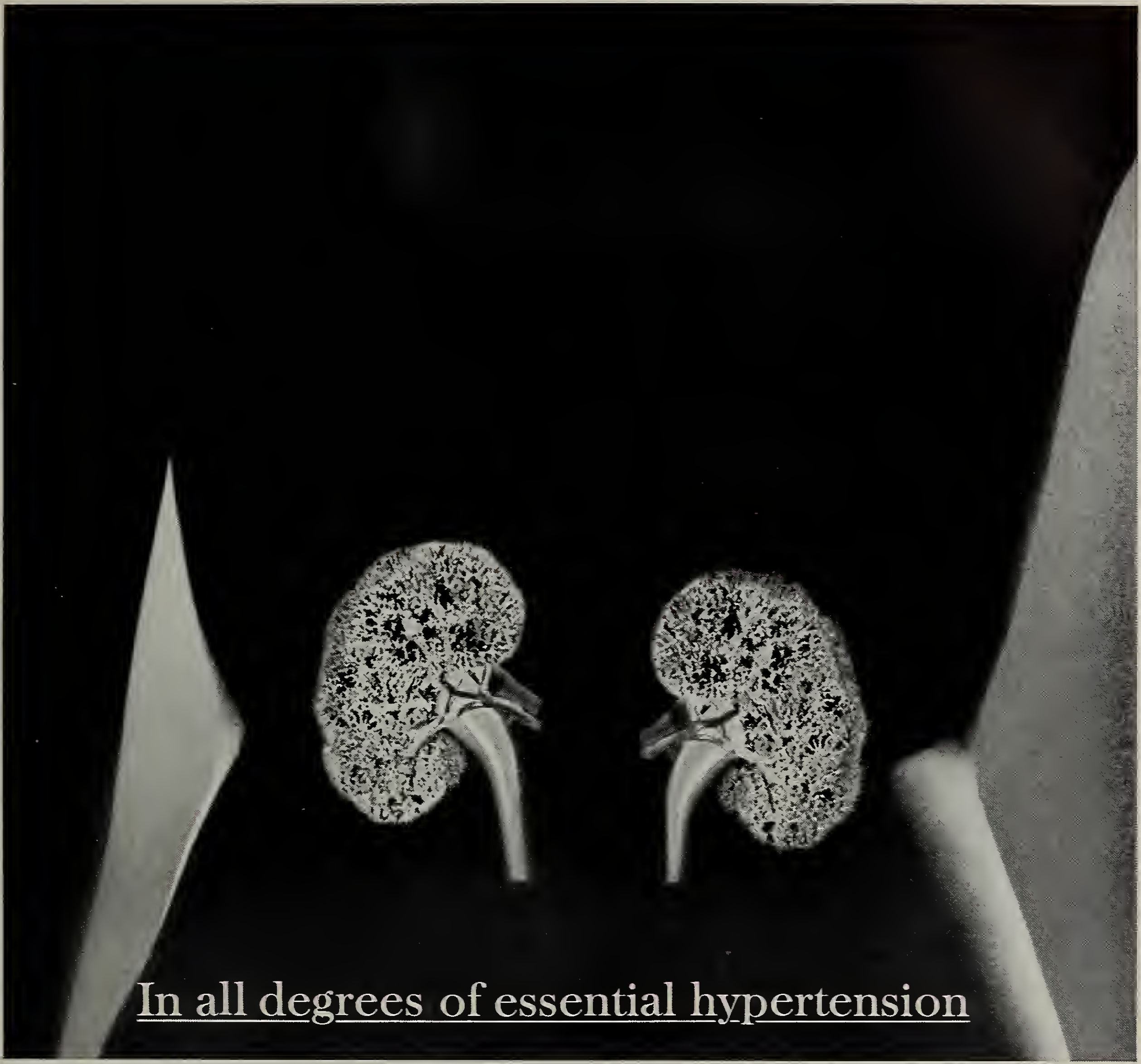
The woman was found to have three sex chromosomes, XXX, instead of the normal two, XX. This chromosome configuration, termed triple-X syndrome, produced no physical abnormalities in this patient.

Another study, reported in the March A.M.A. *Archives of General Psychiatry,* revealed two cases of schizophrenia among five mentally defective patients with abnormalities of the sex chromosomes. John Money, Ph.D., and Steven R. Hirsch, A.B., Johns Hopkins Hospital, Baltimore, said among 1,700 mentally defective patients there were two men and three women with abnormal chromosome configuration.

Whereas a normal man has 46 chromosomes including two sex chromosomes, XY, they said, these two men had 48 chromosomes including four sex chromosomes, XXXY. The three women, instead of the normal 46 chromosomes and two sex chromosomes, XX, had 47 chromosomes including three sex chromosomes, XXX, they said.

Of these five, one man and one women were schizophrenic and had schizophrenic relatives, they said.

A study of the parents and other members of the family of one of these patients led the researchers to conclude that if there is a genetic trait for schizophrenia, it is not carried on the X chromosome.



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References: (1) Moyer, J. H., and Heider, C.: Am. J. Cardiol. *9*:920 (June) 1962. (2) Brest, A. N., and Moyer, J. H.: Pennsylvania M. J. *63*:545 (Apr.) 1960. (3) Hutchison, J. C.: Current Therap. Res. *4*:610 (Dec.) 1962. (4) Berry, R. L., and Bray, H. P.: J. Am. Geriatrics Soc. *10*:516 (June) 1962. (5) Feldman, L. H.: North Carolina M. J. *23*:248 (June) 1962.

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Hereditary Factor Seen in High Blood Pressure

Blood pressure responses may be an inherited characteristic which predisposes to high blood pressure, a study indicated recently.

A standard test given to 207 persons to determine their blood pressure response revealed a larger number of hyperreactors among those with a hypertensive father or mother than among those whose parents had normal blood pressure, according to Paul H. Barnett, M.D., Edgar A. Hines Jr., M.D., Alexander Schirger, M.D., and Robert P. Gage, M.S., Mayo Clinic, Rochester, Minn.

In families in which one or both parents were hypertensive, 23 of 73 children were hyperreactors, the researchers reported in the March 9 *Journal of the American Medical Association.* In families in which neither parent was hypertensive, only 8 of 107 children were hyperreactors, they said.

The finding that the percentage of hyperreactors in hypertensive families was more than four times the percentage seen in normal families lends further support to the concept that this type of vascular reactivity is an inherited characteristic, they said.

Most parents of the subjects studied had been patients at the Mayo Clinic and records showed that the family histories were accurate, they said.

The blood pressure reactions generally were measured by taking the normal blood pressure at rest and comparing it with the rise in blood pressure when the subject's hand was placed in cold water for one minute, the researchers said.

The 207 participants, ranging in age from 33 to 46, were part of a group of 300 students at St. John's School in Rochester who were similarly tested 27 years earlier, they said.

Thirty-one subjects who were hyperreactive when originally tested in 1934 and who were retested in 1961 again proved to be hyperreactive, they said. In addition, 21 previously normal reactors had hyperreactive responses to the 1961 test, they said.

It was found that 4 of 40 subjects designated hyperreactors in 1934 had developed high blood pressure, whereas none of the 167 designated normal reactors had become hypertensive, they said.

This tends to support the theory that persons who are hyperreactors are more likely candidates for high blood pressure than those with normal reactions to this test, the researchers concluded.

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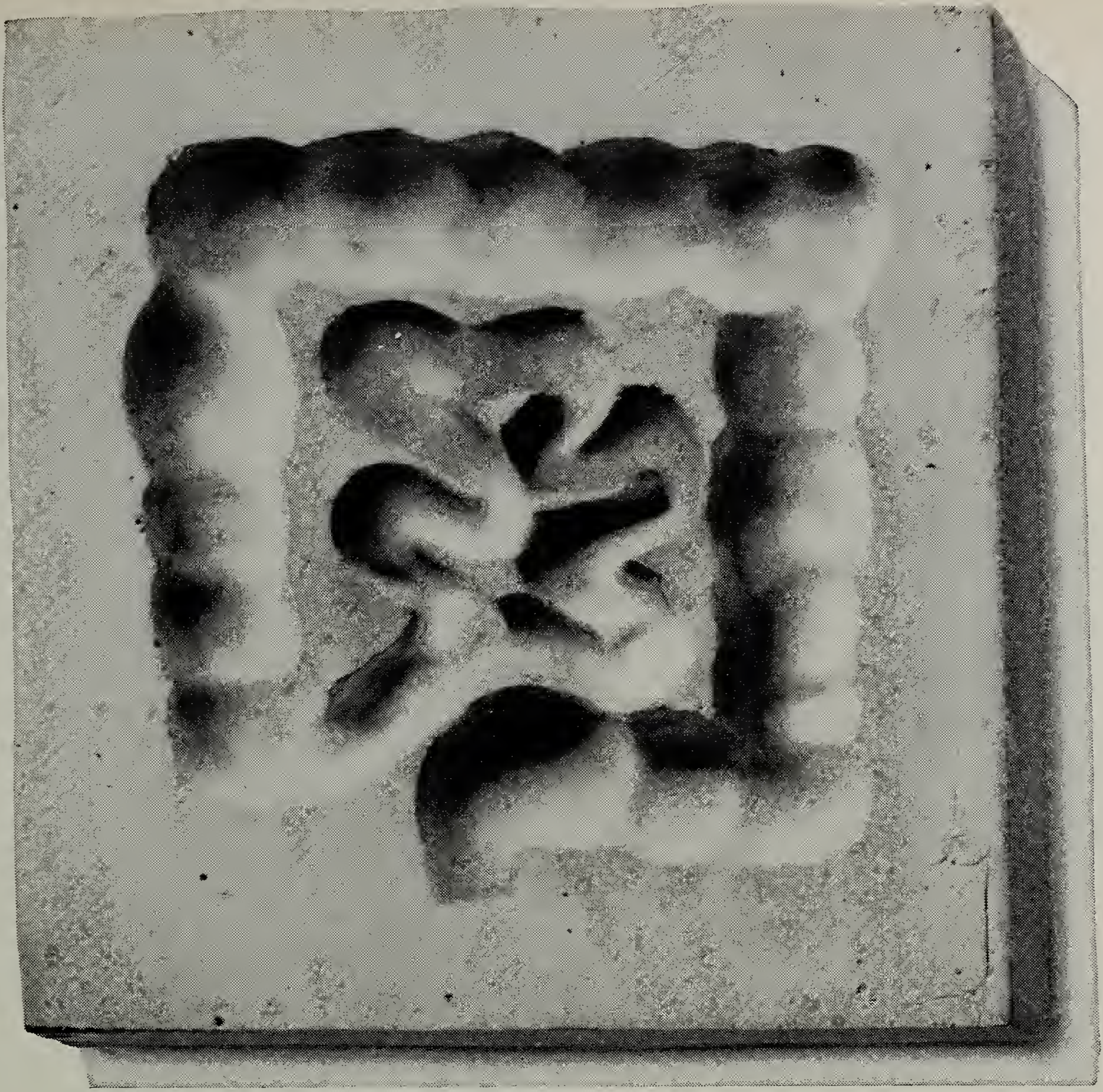

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*Mintz, A. A.: Antibiot. Med. Clin. Ther. 7:481, 1960.

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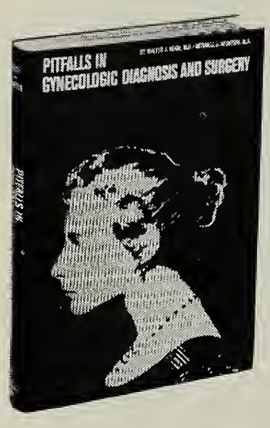

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A.M.A. Council Elects New Chairman

Dr. Lemuel C. McGee, Wilmington, Del., has been elected chairman of the American Medical Association's Council on Occupational Health.

He succeeds Dr. James H. Sterner, Rochester, N. Y.

Dr. McGee has been a member of the council since 1954 and was its vice-chairman during 1962. He is also secretary of the A.M.A. Section on Preventive Medicine.

Dr. McGee received his M.D. from Rush Medical College, Chicago, in 1930, and his Ph.D. in physiological chemistry from the University of Chicago in 1927. At present he is medical director of Hercules Powder Company, Wilmington, and visiting professor, industrial medicine, University of Pennsylvania School of Medicine and attending chief, department of medicine, Delaware Hospital.

The council also elected Dr. Eli Sherman Jones, Hammond, Ind., vice-chairman. Dr. Jan H. Tillisch, Rochester, Minn., was elected to the executive committee along with Drs. McGee and Jones.

New Staph Types Double After Antibiotics

Antibiotic therapy has been shown to have a significant influence on the subsequent acquisition of staphylococci, bacteria normally harbored by the body but which can cause disease.

A study involving 373 children living in a rural community in upstate New York revealed that the acquisition rates of new strains of staph doubled after antibiotic therapy, according to a report in the March 30 *Journal of the American Medical Association.*

The study, which extended over an eight-month period, also revealed significant increases in penicillin-resistant strains after antibiotic therapy, Drs. Malcolm I. Page, Clinton Van Zandt Hawn, and Joe H. Cannon, Cooperstown, N. Y., said.

The presence of staph in the nose was determined prior to the use of antibiotics, primarily penicillin, during their use and for three months after their use, the researchers said.

The net effect of antibiotic therapy on nose carriers of staph was "a sharp reduction in the number of carriers of sensitive strains during therapy with a significant increase in carriers of resistant strains following therapy," they said.

Of 3,909 attempts to recover staph from children independent of antibiotic therapy, 260 acquisitions were made, or an acquisition rate of 6.7 per 100 possibilities, they said. Following antibiotic therapy, there were 55 acquisitions out of 415 attempts, or a rate of 13.3 per 100 possibilities, they said.

Of the total strains acquired after antibiotic therapy, approximately 70 per cent were resistant, the researchers said. However, of 260 strains acquired

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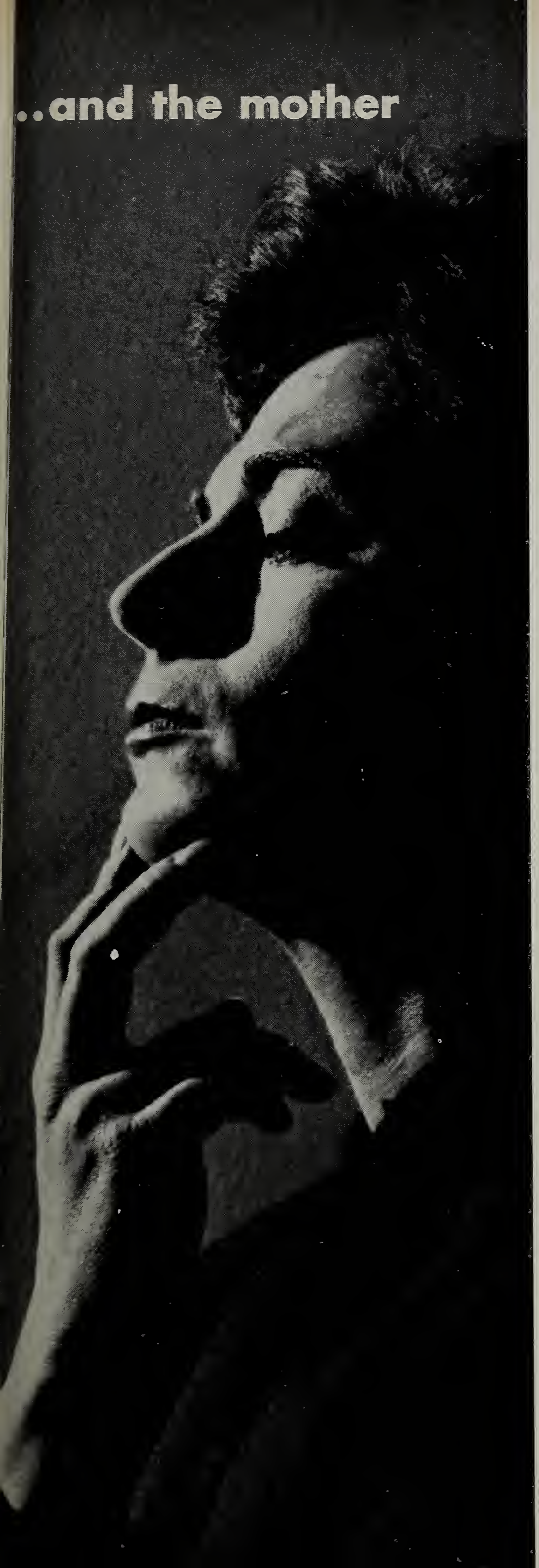

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"Hypo-Allergenic" Called Meaningless Cosmetics Term

The term "hypo-allergenic" in reference to cosmetics is no longer necessary or desirable and its use should be discontinued, says a report in the April issue of *Today's Health*, the magazine of the American Medical Association.

At present there is little distinction among established lines of cosmetic products as to their sensitization potential, the report stated.

The term hypo-allergenic was coined 25 years ago, at a time when allergic reactions to cosmetic products were more common. Some manufacturers began producing cosmetic lines from which known sensitizing agents were omitted. These firms labeled their products "hypo-allergenic," to show they were safer than some other products. The dermatologist and his patients have learned to identify the brand names of these products and will continue to use these products because of considerations other than those of hypo-allergenicity.

Today all manufacturers of the major brands of cosmetics have eliminated known ingredients that were causing allergic reactions, the report says.

"Reactions to cosmetic products, regular or hypo-allergenic, are relatively rare today and involve individual idiosyncrasies to specific ingredients."

Athlete's Desire for Meat Mostly Psychological

A high school athlete does not require an unusually large amount of meat to receive an adequate diet, according to Philip L. White, Sc.D., secretary of the Council on Foods and Nutrition, American Medical Association.

Although athletes put great store in meat, their demand for it is more psychological than physiological, Dr. White said in the May *Today's Health* magazine, published by the A.M.A.

"Frequently, meat and protein are unduly associated in the mind with power," he said.

"The fact is, the athlete and the heavy laborer have no greater protein needs than do their less active counterparts. Using your muscles and pushing your weight around increases caloric requirements, *not* protein requirements."

HYPERTENSIVE DIABETIC KIDNEY AS MODEL OF SO-CALLED COLLAGEN DISEASES—A. C. Lendrum. Canad. Med Assn. J., 88:442 (March 2) 1963.

Study of the renal vascular lesions of maturity-onset diabetes with new staining methods shows that the fibrinous deposits in the vessel walls change to an acellular amorphous material staining as collagen. This pseudo-collagen is so clearly the end-result of an escape of plasmatic substances that a similar deposition may well follow the other forms of plasmatic vasculosis—hypertensive, static, or hyperergic, this last being the probable basis of the so-called collagen diseases.

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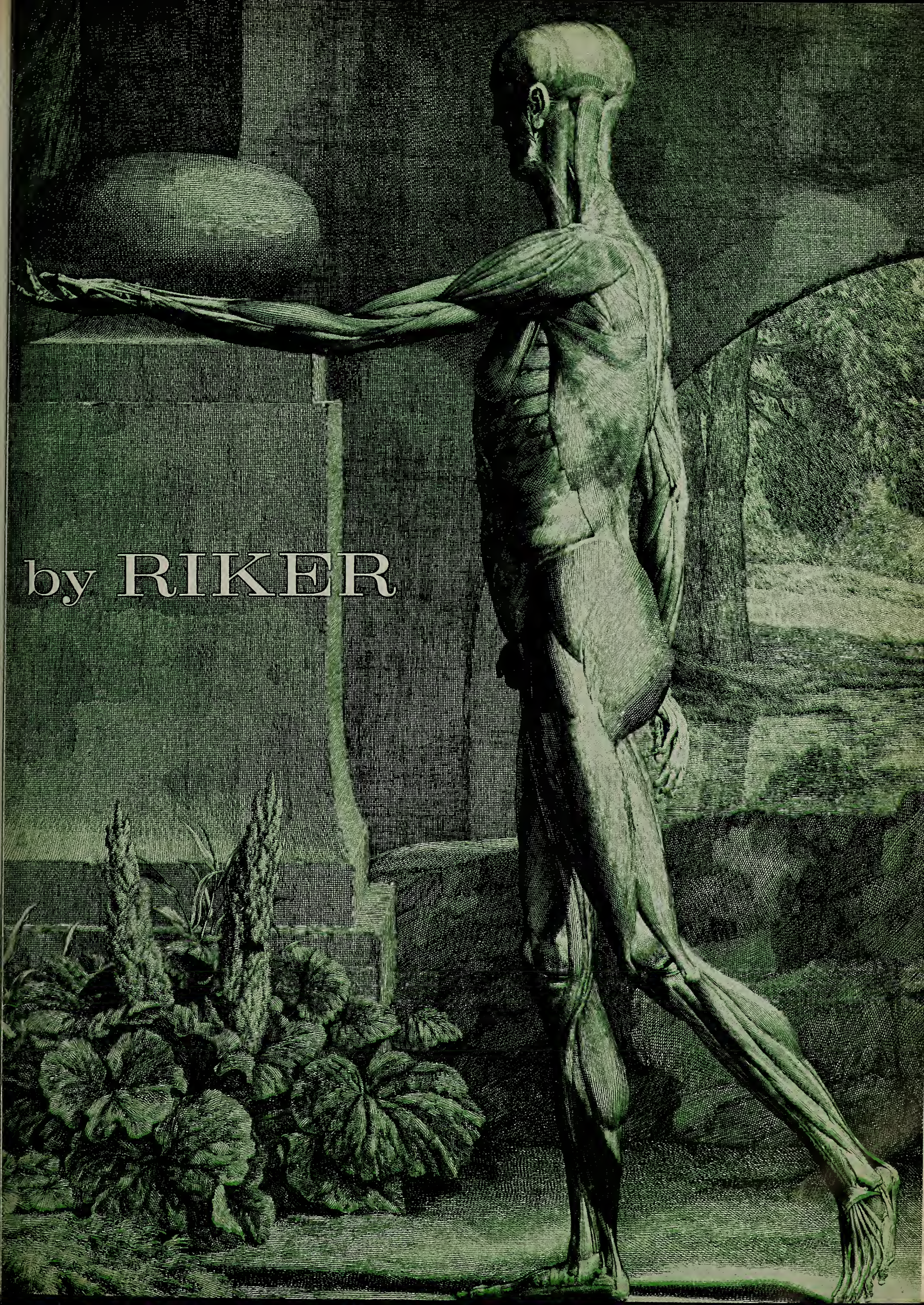
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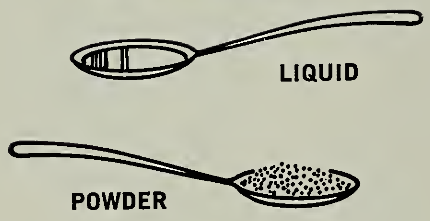

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References: 1. Raddin, J. B., and Dowell, L. B.: Amer. J. Gastroent. 37:24-40 (January) 1962. 2. Calloway, N. O.: Article to be published. 3. Reichert, J. L.: Pediat. Clin. N. Amer. 2:527-538 (May) 1955. 4. Hootnick, H. L.: J. Amer. Geriat. Soc. 4:1021-1030 (October) 1956.

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New Staph Types Double After Antibiotics

(Continued from Page 10)

independent of antibiotic therapy, only 109, or 42 per cent, were resistant, they said.

No sensitive strain of staph was observed to become resistant either during or after antibiotic therapy, according to the report.

The study also showed that new strains acquired by these children during the study did not come from members of their immediate household nor from the hospital in Cooperstown, the physicians said. One of the main reasons why the hospital was not implicated undoubtedly was the absence of epidemic staph disease within the institution, they said.

Staphylococci are the cause of most of the superficial pus-forming infections in man. They have become of increasing importance in recent years because of their capacity to develop resistance to antibacterial drugs.

Antibiotic Relieves Pain In 10 Heart Patients

An antibiotic customarily used for fungus infections of the skin has produced unexpected relief of chest pain in 10 heart patients, three New Orleans physicians reported recently.

The effect was first noted in an elderly patient who had angina pectoris, a chest pain associated with certain heart conditions, who was given griseofulvin for the treatment of a fungus skin infection, Drs. N. P. DePasquale, J. W. Burks and G. E. Burch wrote in the May 4 *Journal of the American Medical Association.*

The patient received "marked relief of his angina pectoris while receiving griseofulvin," they said.

Griseofulvin then was given to 10 other patients with severe coronary heart disease who had at least 20 anginal episodes a week, they said.

"All of the patients reported a decrease in the number of anginal episodes after receiving griseofulvin for two or three days," they said. "In three patients, cessation of griseofulvin therapy was follower by an increase in the number of anginal attacks to the same frequency as before griseofulvin therapy. Reinstitution of griseofulvin therapy again was followed by a relief of the anginal pain."

These patients had received other drugs under similar circumstances without relief of pain, the physicians added.

Although the way in which griseofulvin alleviated the pain is not known, they suggested that the drug might be useful in managing angina attacks in patients in whom more conventional means of therapy have been ineffective.

Griseofulvin was introduced in 1959 and like penicillin is derived from a Penicillium mold strain.

The authors are affiliated with Tulane University School of Medicine.

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New Focus Needed to Halt Rising Rate of Syphilis

A new approach to "time-tried" methods of controlling syphilis is needed to curb the rising number of cases in this country, according to Dr. R. H. Kampmeier, Vanderbilt University School of Medicine, Nashville, Tenn.

"The immediate problem now is *not* the mere application of time-tried methods, but rather their implementation with a different focus," he said in the March 30 *Journal of the American Medical Association.*

Since the advent of penicillin, more patients are being treated in physicians' offices than in public clinics, he said. Eradication of syphilis, therefore, must have as its pivot the doctor in private practice and will depend mainly upon cooperation between the practitioner and health authorities, he said.

The application of the methods of case finding and investigation of contacts developed and proved in the public clinics must now be oriented to the private physician, Dr. Kampmeier said.

"It would be unrealistic to expect the practitioner to do field work in investigation of contacts, even if he had had training in its techniques," he said. "Therefore, he must have help in the person of a trained interviewer."

In Georgia, a case reporting program in which physicians were urged to introduce trained interviewers to their patients with infectious syphilis showed "amazing success," Dr. Kampmeier said. Between 1956 and 1959 the number of cases reported increased by more than 10 times the number in the previous three years, he said, and the number of patients interviewed increased to 97 per cent.

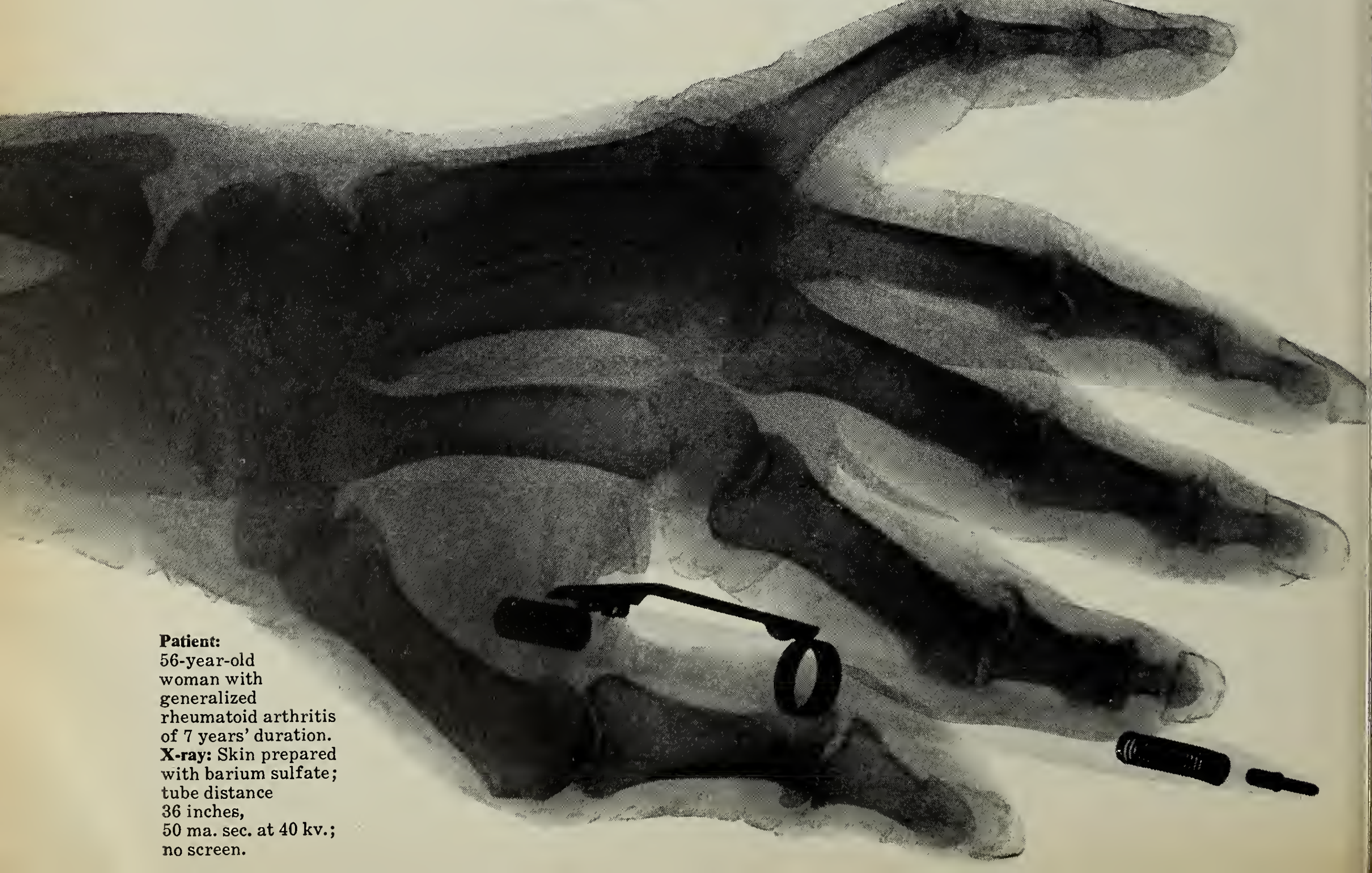
"Assistance to the doctor in inquiry about contacts has developed all too slowly, though the current rising incidence of syphilis is forcing its acceleration," he said. "An extension of such services to the physician and its concurrent education to the responsibilities of reporting syphilis and preparing his patient for meeting an interviewer are the only answers to the current impasse in the eradication of syphilis."

On the basis of acceptable statistical estimates, Dr. Kampmeier said, it is likely that the incidence of acute syphilis in this country is about 60,000 cases per year. However, he said, over a five-year period the average annual number of reported cases was 6,500, indicating that 53,500 probable cases of infectious syphilis were missed or not reported each year.

Dr. Kampmeier also stressed the importance of the blood test for syphilis, which he termed "the major tool in case finding," and posttreatment follow-up examinations.

Follow-up examinations are needed to control the spread of the disease through infectious relapse and

In rheumatoid arthritis ..



Patient:
56-year-old
woman with
generalized
rheumatoid arthritis
of 7 years' duration.
X-ray: Skin prepared
with barium sulfate;
tube distance
36 inches,
50 ma. sec. at 40 kv.;
no screen.

to protect the patient's future health, he said.

Public health personnel and medical societies should use every means to educate the public to accept the advice of their physicians and to stress the need for periodic follow-up examinations, he said.

In addition, Dr. Kampmeier said, there is a need for better education among graduate physicians and undergraduates with regard to syphilis.

Changes Urged for Fair Cardiac Compensation

The cost of compensation for cardiac disability borne by industry can be "greatly reduced" but not by keeping heart patients off the payrolls, Dr. Louis H. Sigler, Brooklyn, N. Y., stated.

"I believe that some corrections in our laws and in our mode of thinking are essential," Dr. Sigler said in the March 9 *Journal of the American Medical Association.*

Intead of devising methods of eliminating cardiacs and so-called potential cardiacs, he said, industry should aim at detecting and preventing heart attacks among its employees and in rehabilitating and encouraging claimants to continue their work.

"In a great many individuals in the 'arteriosclerotic age' there may be absolutely no physical or laboratory findings to indicate the presence of coronary disease shortly before the acute attack, and it is often impossible to predict who will suffer an attack and to what extent," he said. "The theory of eliminating cardiacs from industry is therefore hypothetical in many cases."

Dr. Sigler said there have been many instances in which heart trouble occurred at home and no careful medical examination was made before the worker was allowed to return to his job. In many of these cases, he said, proper management of the patient and rest would have prevented a later attack occurring at work for which the employer was held responsible.

"This is a major factor which contributes greatly to loss of money and life in cardiac disease," he said.

The relative safety of heart patients returning to work after recovery from an attack and the infrequency of total disability and early death should be demonstrated to industry and patients, Dr. Sigler said.

"Most individuals who sustain an acute cardiac injury and recover are able to pursue their occupations, in some cases for many years," he said. "In my experience, upward of 75 per cent to 85 per cent of patients who recover from acute infarction belong in that category.

"A realization of this fact by industry would allay the fear of employing individuals of the 'arteri-

(Continued on Page 34)

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1. Boland, E. W.: J.A.M.A. 17:835 (Oct. 15) 1960. 2. Black, R. L., et al.: Arthritis and Rheumatism 3:112 (April) 1960.

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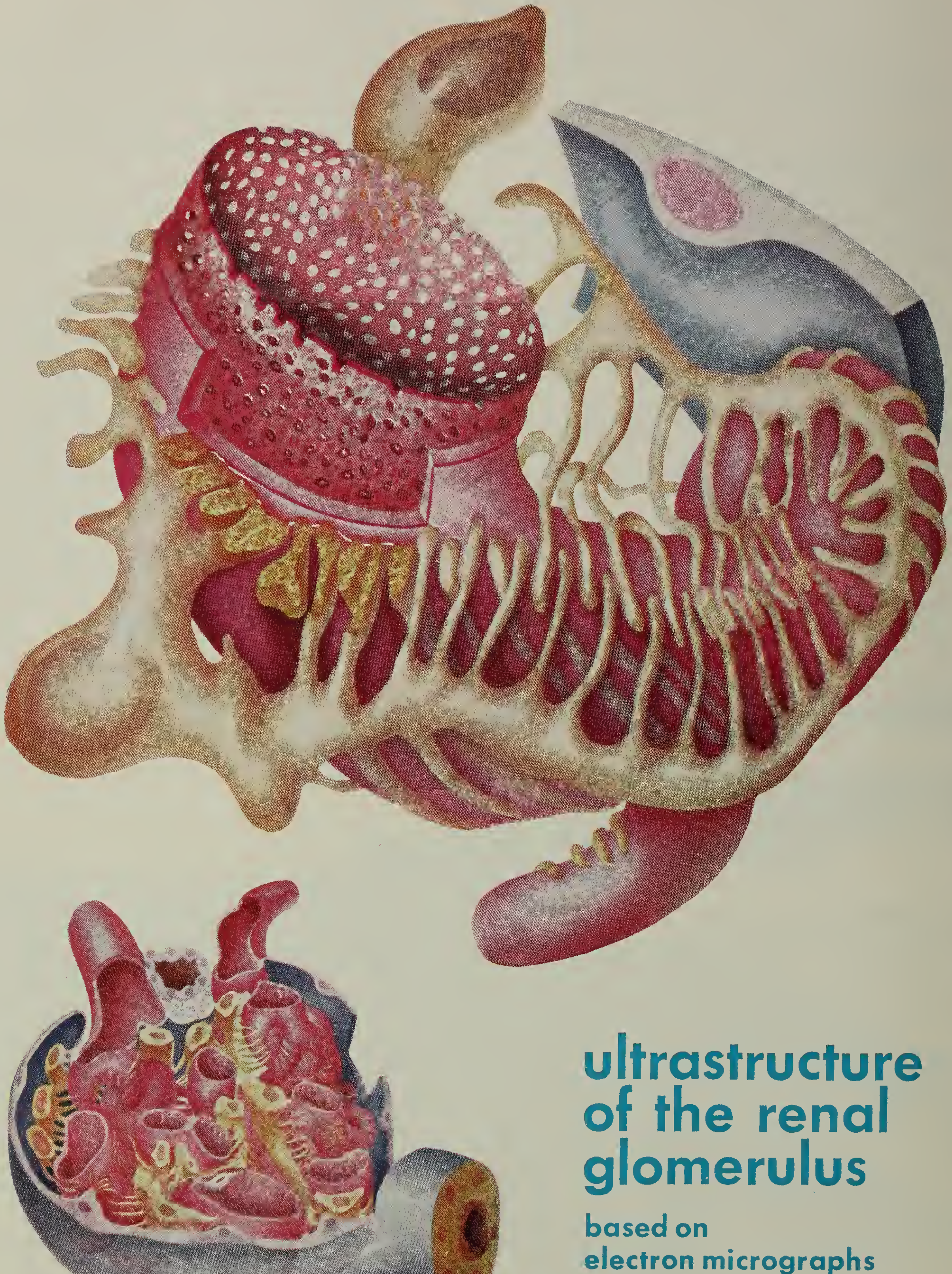

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Changes Urged for Fair Cardiac Compensation

(Continued from Page 27)

osclertoic age,' even in the presence of demonstrable cardiac disease. It should also eliminate costly litigation in fighting every case, even those in which there is unmistakable causal relationship."

In addition, he said, some allowance should be made for the chronic underlying disease which participates in the development of the acute process. Although the award ordinarily given for a disability is much smaller than the wage of the injured person, and may be considered as such an allowance, the difference is not sufficient to relieve the employer, he said.

Therefore, Dr. Sigler said, payment for the disability should be continued only up to the ordinary retirement age of the individual at which time Social Security and other benefits should take over.

"I believe that the savings to the employer or the insurance carrier by eliminating payments beyond the retirement age will greatly reduce the average cost of compensation and remove some of the fear in industry to employ these individuals," he said.

Finally, he said, for proper administration of compensation law in cardiac disability, it is essential that evaluation of each case be made by an impartial, well qualified physician selected and paid by the state. Under this arrangement he said, a great many cases would be settled without the unnecessary expense of a trial.

Dr. Sigler is consulting cardiologist, Coney Island Hospital, Peninsula General Hospital, and Menorrah Home and Hospital for the Aged.

DICHLORPHENAMIDE IN THE TREATMENT OF THE BRONCHO-EMPHYSEMATOUS PATIENT—B. Mann. Dis. Chest, 42:285 (March) 1963.

Subjective and objective improvements in breathing, the latter indicated by a reduction in arterial pCO_2 and increased vital capacity, were observed in 4 of 14 patients, who were receiving a daily dosage of 100 to 200 mg of dichlorphenamide. Examination of the case records failed to disclose the reasons for the success obtained in these patients and the failure to respond to therapy in others.

* * *

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Volume 98 JUNE 1963 Number 6

Tetanus

The Use of Human Hyperimmune Globulin in Treatment

N. S. NATION, *M.D.*, N. F. PIERCE, *M.D.*, S. J. ADLER, *M.D.*,
R. F. CHINNOCK, *M.D.*, and P. F. WEHRLE, *M.D.*, Los Angeles

• Twenty patients with tetanus were treated with human hyperimmune globulin. The mortality rate in the series was 30 per cent. No complications due to the use of this antitoxin were observed.

ALTHOUGH TETANUS is a relatively uncommon disease, the long illness and high mortality associated with it increase its relative importance as a health problem. This is particularly true when one considers the numerous complications associated with both prophylaxis and therapy of this disease. The purpose of this report is to describe our experiences in treating a series of 20 patients with tetanus with relatively low doses of human hyperimmune globulin, thus completely avoiding animal serum reactions, which are serious and at times fatal complications of therapy in this disease.

The patients studied were admitted to the Communicable Disease Service of the Los Angeles County General Hospital between January 1, 1961, and October 5, 1962, for the treatment of definite clinical tetanus. The only patients excluded from the series were those receiving animal antitoxin before entry. None of the patients in this series had received tetanus toxoid at any previous time.

A single dose of 3,000 to 6,000 units of hyperimmune human globulin* was administered on admission to this hospital or as soon as the diagnosis was established. In general the larger doses were given to patients with either a rapidly progressing illness or a short incubation period. The hyperimmune human globulin is prepared from the sera of actively immunized humans by the Cohn cold ethanol fractionation procedure. It consists of 165± 15 mgm per ml of 100 per cent pure gamma globulin, 90 per cent of which is tetanus immune globulin. This antitoxin is prepared in the same manner as that supplied by the Red Cross, which has been amply demonstrated to be free of risk of transmitting viral hepatitis.[13]

The remainder of the clinical management followed established principles and involved special nurses, tracheostomy,[3,12] incision and drainage or local excision of the primary site when identified, penicillin and broad spectrum antibiotic therapy, and meprobamate†[6] given intramuscularly and supplemented in most cases by various other agents for sedation and control of muscular spasms.

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*Hyper-tet® supplied by Dr. Walter E. Ward, Cutter Laboratories, Berkeley.

From the departments of pediatrics, Loma Linda University and University of Southern California schools of medicine and the Communicable Disease Service, Los Angeles County General Hospital, Los Angeles 33.

This study was aided in part by a grant from the Hastings Foundation.

Submitted March 15, 1963.

†Supplied as "Miltown® Intramuscular" by Wallace Laboratories, Cranbury, New Jersey.

TABLE 1.—*Data on 20 Patients with Tetanus Treated with Human Hyperimmune Globulin*

Patient No.	Age (Years)	Weight (Kilograms)	Units Human Tetanus Antitoxin	Units Per Kg of Weight	Duration of Antispasmodic Therapy (Days)	Outcome
1	8	30	3,000	100	18	Living
2	7	20	6,000	300	16	Living
3	63	82	3,000	37	18	Living
4	71	64	4,500	70	9	Died
5	84	55	3,000	55	8	Living
6	3	17	3,000	177	16	Living
7	37	45	3,000	67	7	Living
8	47	67	3,000	45	13	Living
9	60	70	3,000	43	2	Died
10	4	16	4,500	281	14	Living
11	70	68	3,000	44	7	Died
12	49	91	4,500	50	5	Died
13	71	105	3,000	29	11	Living
14	46	85	3,000	35	2	Died
15	65	66	4,500	68	13	Living
16	76	68	3,000	44	2	Died
17	23	61	3,000	49	20	Living
18	5	15	3,000	200	8	Living
19	4	15	3,000	200	8	Living
20	47	54	3,000	56	13	Living

TABLE 2.—*Cause of Death in Six Cases of Patients with Tetanus Treated with Human Antitoxin*

Patient No.*	Age	Cause of Death
4	71	Myocardial infarction, pneumonia. (No autopsy.)
9	60	Acute and old myocardial infarction. (Coroner's autopsy.)
11	70	Pneumonia, thrombophlebitis, recent cerebral artery occlusion. (No autopsy.)
12	49	Pneumonia, probably myocardial infarction. (No autopsy.)
14	46	Aspiration of blood secondary to laceration of tongue. (Coroner's autopsy.)
16	76	Acute and old myocardial infarction. (Coroner's autopsy.)

*Refers to Table 1.

RESULTS

In Table 1 the patients studied are listed with the amounts of antitetanus globulin given, the duration of continuous antispasmodic therapy as an indication of the severity of the disease, and the final outcome. There were six deaths in this group of twenty patients giving a total mortality rate of 30 per cent. The cause of death in three cases was confirmed by autopsy, and in the remainder the clinical cause of death is described (Table 2).

In no patient was there evidence of any kind of hypersensitivity reaction to the antitoxin either immediately following injection or during their hospital stay. There was no instance of unexplained fever, skin rash, arthritis, myocarditis or neurological involvement in any patient.

All of the six patients who died were over 45 years of age.

Two of the six deaths were due to advanced coronary atherosclerosis with proven fresh myocardial infarction. In two others acute myocardial infarction was the clinical cause of death but autopsy was not done. One patient had clinical evidence of pneumonia and a recent cerebral artery occlusion. One patient died suddenly after aspirating blood from a laceration of his tongue. The aspiration was confirmed by autopsy. None of the deaths appeared to be related to any possible adverse reaction to the antitoxin.

DISCUSSION

The complications of therapy involving parenteral administration of animal serum are well known. These include potentially fatal anaphylactic reaction, "accelerated" serum sickness, classical serum sickness, various neurological complications such as demyelinating encephalomyelitis, the Guillain-Barre syndrome and polyneuritis, and sensitization of the patient, which increases the risk of an adverse reaction on any subsequent administration of animal serum. It is estimated that the incidence of serum sickness following a single prophylactic injection of 1,500 to 3,000 units of equine tetanus antitoxin is 30 per cent.[5] This may be reduced to 1.6 to 6 per cent[5,8,10] by the "de-speciated" horse serum now in common use. This incidence is, however, greatly increased with administration of larger volumes of equine or bovine serum and may be well above 50 per cent with the doses of 60,000 to 300,000 units of antitoxin which have been previously recommended for the therapy of tetanus.

Heterologous tetanus antitoxin has other characteristics limiting its effectiveness. It has been shown that equine antitoxin administered to a sensitive person gives unpredictable levels of circulating antitoxin and may be completely destroyed in four to nine days.[4] Smolens and coworkers[11] determined the half life of equine tetanus antitoxin to be only seven to fourteen days in non-sensitive persons. Skudder and coworkers[10] demonstrated that 55 per cent of persons were sensitive to equine serum as determined by reaction to an intradermal test. Approximately two-thirds of these persons were also sensitive to bovine serum. Furthermore, attempts to predetermine sensitive individuals by skin and conjunctival tests are frequently inaccurate and persons with positive reaction to such tests may require tedious "desensitization" to the foreign serum only to have the serum rapidly destroyed.

The use of hyperimmune gamma globulin of human origin can completely circumvent these difficulties. Human tetanus antitoxin has not been associated with hypersensitivity phenomena of any kind when given intramusclarly. It provides prolonged and predictable serum levels of antitoxin. It has a half life of four weeks and shows appreciable serum levels up to 14 weeks.[11] It has been shown in humans[7] that human antitoxin will produce protective blood levels of antitoxin in much smaller doses than equine tetanus antitoxin. The amount of antitoxin recommended by Rubbo and Suri[7] for tetanus prophylaxis was five units per kilogram of body weight, which consistently produced serum levels greater than 0.05 units per milliliter and protective levels that persisted for more than three weeks. The dose we used was selected on the basis of previous experimental work which indicated that levels of 0.08 to 0.160 per milliliter of serum would be achieved with 1,500 units of human antitoxin.[11] We chose to administer 3,000 to 6,000 units to purposely provide blood levels well in excess of these values. In this series the dose range was from 29 units to 300 units per kilogram of body weight. No difference in effectiveness was noted at the extremes.

The mortality rate in this series was 30 per cent. This compares favorably with our previous experience and that of others using antitoxin of equine origin in large doses. It also is much better than the 60 per cent death rate reported for the entire nation from 1951 to 1954.[1] This improvement cannot be attributed to the use of human antitoxin alone, as there are many other important factors in the treatment of tetanus. It is, however, worth noting that the six deaths in this series were all due to primary causes other than tetanus itself, and that all occurred in the over 45 age group, which would suggest that the presence of the degenerative diseases of older age greatly influence the prognosis in this disease.

Meprobamate given intramuscularly was helpful when used as a muscle relaxant. It was used in all but the first two cases in this series. However, it was necessary in all but two instances (Cases 9 and 19) to supplement this agent with various combinations of phenobarbital, amobarbital, chlorpromazine, promethazine and methocarbamol (Robaxin®) for sedation and for control of severe spasms. The dosage of meprobamate was 400 mg intramuscularly every three to four hours in adults and 200 mg every four hours in small children. Meprobamate by mouth was ineffective as a muscle relaxant.

CONCLUSIONS

Human tetanus antitoxin used in the therapy of tetanus provides sustained levels of circulating antitoxin with no risk of the multiple manifestations of foreign serum hypersensitivity. A dose of 3,000 to 6,000 units of human tetanus antitoxin produces levels well in excess of recommended therapeutic levels.[2] It is recommended that human tetanus antitoxin replace the widespread use of equine or bovine antitoxin in the therapy of tetanus.

Department of Pediatrics, 1200 North State Street, Los Angeles 33 (Wehrle).

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Systemic Lupus Erythematosus

The Effect of Corticotropin and Adrenocorticoid Therapy on Survival Rate

JACK POSNICK, *M.D.*, San Francisco

• Ninety-four cases of systemic lupus erythematosus (SLE) were reviewed to assess the effect of adrenocorticotropin and adrenocorticoids on survival rate. Of the 43 patients who died, the mean survival in treated cases was 4.7 years, compared with 2 years in the control group. Utilizing a modified life table method, five-year survival rates were calculated for patients with SLE classified according to the severity of symptoms at the onset of disease. Survival rates for the treated and control groups were similar for patients with *mild* SLE, but definitely favored the treated patients who had *moderate* or *severe* forms of the disease. Thus, corticotropin or adrenocorticoid therapy seems definitely indicated in the *moderate* and certainly in the *severe* cases of SLE.

THE INITIAL REPORT by Hench and coworkers,[9] concerning the use of pituitary adrenocorticotropic hormone and cortisone in the treatment of rheumatoid arthritis, heralded a wave of enthusiasm for what appeared to be a major advancement toward the eradication of a host of disorders. The medical literature soon became replete with reports concerning the dangers and limitations of these drugs and it rapidly became apparent that the symptomatic benefits observed were difficult to sustain with safe maintenance dosages. In addition, it was demonstrated convincingly that this therapy seldom altered the ultimate course of the two most common chronic inflammatory diseases, rheumatoid arthritis[1,14,18] and rheumatic fever.[26] Yet there has been general agreement that adrenocorticoids may be lifesaving in certain fulminating conditions such as anaphylactic shock, status asthmaticus, pemphigus, overwhelming infection and acute systemic lupus erythematosus (SLE).* In clinics dealing with large numbers of cases of systemic lupus erythematosus there have been indications that the life history of this particular collagen disease may be favorably affected with regard to both morbidity and mortality.†

This study concerns 94 cases of SLE treated at the University of California Medical Center from 1940 through 1960 and endeavors to appraise the effect of corticotropin and adrenocorticoid therapy on survival rates.

METHOD OF STUDY

The data reported in this evaluation were compiled from the medical records of patients proved to have SLE by autopsy, by biopsy or by the presence of lupus erythematosus cells on two or more occasions coincident with clinical symptoms of SLE.

Included in the control group were all patients in whom SLE began before 1950 (the approximate year that corticotropin and adrenocorticoids became generally available). Those patients within the control group who eventually received adrenocorticoid therapy were withdrawn from the study on the date they began treatment. The number of control patients totalled 39.

The treated group consisted of every patient in whom the disease began in 1950 or later. There were 55 of them and all but six received adrenocorticoid therapy. In analyzing the data it became apparent that it would not be practical to consider in detail the type of adrenocorticoid or corticotropin therapy the patients received, as the preparations used were quite varied and doses were changed frequently during the course of the disease. Suffice it to say that the treated patients invariably received as a minimum daily maintenance dose the equivalent of 30 mg of hydrocortisone and, more often, doses of both corticotropin and adrenocorticoids two or three times this amount. During acute exacerbations high doses were employed in nearly all cases.

Striving for the most reliable means of comparison, cases were classified as *mild, moderate* or *severe* by means of inspection of the histories and physical examinations reported in patient records but without knowledge of the ultimate course of the illness. The series was thus divided in order to correct for the larger proportion of more recent cases of SLE which were diagnosed sooner after onset and represented milder forms of the disease. The factor of earlier recognition of the disease after 1950 would tend to make data from earlier periods not

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*Reference Nos. 2, 8, 12, 13, 15, 16, 20-23, 25.

†Reference Nos. 2, 4, 6, 8, 10, 11, 15, 22-24.

From the Department of Medicine and the Metabolic Research Unit, University of California School of Medicine, San Francisco 22.

The work reported in this paper was supported in part by a grant in aid from H. C. Peltier, M.D., of The Upjohn Company, Kalamazoo, Michigan.

Submitted September 18, 1962.

comparable with those of later times unless some such classification is used. In addition it seemed more reliable to compare patients who had approximately the same degree of illness. The classification of *mild* was assigned to patients in whom the disease began with minimal complaints such as dermatitis or nondisabling arthropathy unaccompanied by objective joint signs. Patients with initial manifestations of extensive dermatitis, objective arthropathy resulting in partial restriction of activity, or both, were included in the *moderate* group. The *severe* group comprised patients with a history of rapid fulminating onset and complete incapacitation. Examples of the latter include those with rapid development of anasarca, pleural effusion, hemiplegia, seizure and decidedly elevated temperature with coma and overwhelming arthritis.

With these criteria, an attempt was made to assess the five-year survival rate by a modified life table method described by Cutler and Ederer[22] which permits inclusion of patients who came under observation less than five years before the closing date of the study.

RESULTS

Data on the sex, race and age at onset, presented in Table 1, closely approximate data from numerous large series previously reported.[6,7,11,24]

The onset was considered to be the time of the appearance of the first significant sign or symptom of SLE, determined as accurately as possible from medical records or personal interview. The age span was similar in both the control and treated patients, approximately 80 per cent falling within the age range of 10 to 40 years.

Polyarthropathy and dermatitis, as would be expected, were the most frequent presenting manifestations of the disease (Table 2), the former being the first sign of onset in 54.2 per cent of the patients and the latter in 25.5 per cent. Less common initial signs were: fever, 7.5 per cent; edema, 5.3 per cent; seizure, 1 case; pleural effusion, 1 case; hemoptysis, 1 case; and toe ulcer, 1 case.

Of all the patients observed, 43 died, 23 in the control group and 20 among the treated. The mean survival for all who died was 3.3 years. The mean survival for treated patients was 4.7 years as compared with 2 years in the control group.

Chart 1 presents the cumulative proportions surviving from the onset of disease to varying yearly intervals for the entire series as a whole as well as for the control and the treated groups. The probability of five-year survival for the treated cases was 73 per cent, compared with 49 per cent for the control group. When extending the life table to ten years, the survival figures on the basis of a statistically diminishing sample were 55 per cent and 33 per cent respectively, for the same groups. It may be noted that the survival curve drops most precipitously in the first two years, especially in the control series.

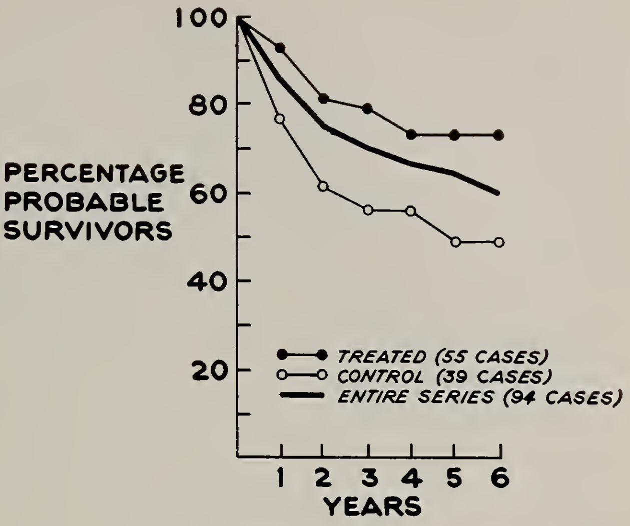

Chart 1.—Survival rates of patients with systemic lupus erythematosus treated with steroids compared with untreated patients.

TABLE 1.—*Data on Age at Onset, Sex and Race of 94 Patients with Systemic Lupus Erythematosus*

	Control	Treated	Total
Number cases	39	55	94
Age at onset, years	28.3	30.4	29.5
Females, per cent	77	74.5	75.75
Males, per cent	23	25.5	24.25
White, per cent	92.3	83.6	87.2
Negro, per cent	5.1	12.7	9.6
Oriental, per cent	2.6	3.7	3.2

TABLE 2.—*Initial Manifestations of Disease in 94 Cases of Systemic Lupus Erythematosus*

	Control	Treated	Total
Number cases	39	55	94
Polyarthropathy, per cent	41	63.6	54.2
Dermatitis, per cent	25.7	25.4	25.5
Fever, per cent	10.2	5.4	7.5
Edema, per cent	10.2	1.8	5.3
Other, per cent	12.9	3.7	7.5

Utilizing the same life table method, Chart 2 shows the probable survival curves as calculated for the three classifications of SLE (mild, moderate and severe, as previously described). It will be noted that the survival curves for the *mild* cases, treated and untreated, are nearly identical, as 75 per cent of the treated cases and 69 per cent of the control patients had survived at the end of five years. In considering the *moderate* cases, it is observed that a rather pronounced difference exists in survivorship by the end of the fifth year, as 87 per cent of the treated patients and 49 per cent of the controls were

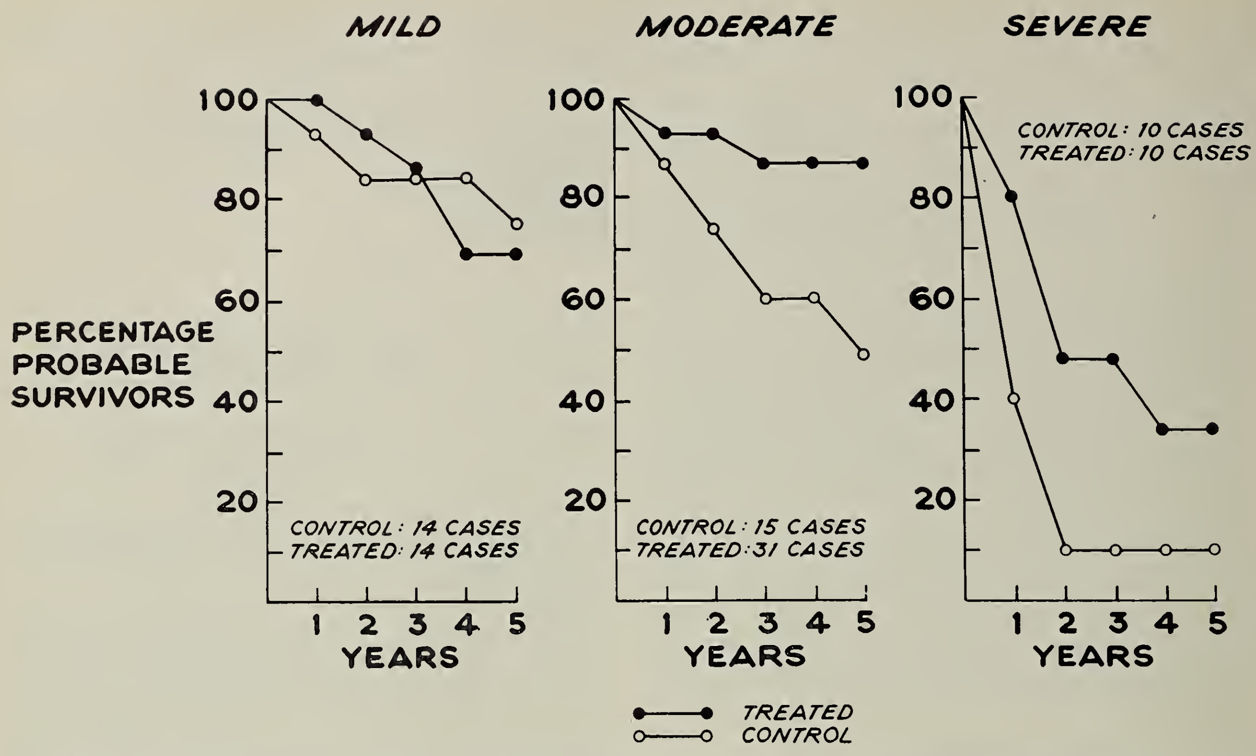

Chart 2.—Survival rates, according to severity of disease, of patients with steroid-treated and untreated systemic lupus erythematosus.

living at that time. The probability of survival among the *severe* cases was much less for both groups, especially during the first two years after onset. The five-year survival rates for this group were 34 per cent for treated cases and 10 per cent for the controls. All but two of the patients in the *severe* group had died by the end of the fifth year.

Autopsy was done in each of the 37 cases in which the patient died. Age at onset, sex and race were no different for those who died than for those remaining in the series. Table 3 shows the major causes of death, and the significant autopsy findings are summarized in Table 4.

It will be noted that in approximately 80 per cent of the cases in which the patient died the cause of death was definitely SLE, while the remainder died of intercurrent disease such as pneumonia (three cases), intracerebral hemorrhage (one case), staphylococcus septicemia (one case), and gastrointestinal hemorrhage (one case). While the major causes of death, for the series as a whole, were cardiac failure and uremia, a striking difference is noted between the treated and the control groups. Death in the control group was the result of cardiac failure in approximately half the patients whereas one-fourth died of uremia. The reverse was true in the treated patients. This would correlate somewhat with the higher incidence of Libman-Sacks endocarditis noted at autopsy in the control group but bears no relationship to the pathology report of kidney "wire-loop" changes present in more than half of both groups. Lupus glomerular changes were noted in the treated cases with approximately 10 per cent less frequency than in the controls.

TABLE 3.—*Cause of Death in 37 Cases of Systemic Lupus Erythematosus*

	Control	Treated	Total
Number autopsies	21	16	37
Cardiac failure, per cent	52.4	25.0	40.6
Uremia, per cent	23.8	56.2	37.9
Pneumonia, per cent	14.3	0	8.1
Other, per cent	9.5	18.8	13.4
SLE, per cent	80.9	81.3	81.1
Intercurrent disease, per cent	19.1	18.7	18.9

TABLE 4.—*Autopsy Findings in 37 Cases of Systemic Lupus Erythematosus*

	Control	Treated	Total
Libman-Sacks endocarditis, per cent	52.4	31.3	43.3
"Wire loop" kidneys, per cent	66.7	56.2	62.2
Serositis, per cent	71.4	62.2	67.6
Bacterial infection, per cent	61.9	62.2	62.2

Bacterial infection was present in approximately 60 per cent of both groups of the autopsied cases and involved the lung in 19 cases, the kidney in three, and the blood stream in two. Tuberculosis, present in three patients in the series, was pulmonary in one living patient and miliary in one who is still living and in another who died. All three were given adrenocorticoids before the diagnosis of tuberculosis was made.

DISCUSSION

In the many reported reviews of SLE, no investigator has attempted a detailed statistical evaluation of the effect of adrenocorticoids on survival rate in this disease. This is understandable in view of the many obstacles involved in dealing with a chronic variable disease. The establishment of a perfect concurrent untreated control series is not possible inasmuch as nearly every patient with SLE in recent years has received adrenocorticoid therapy. Nevertheless, it is felt that important information can be derived from a study such as this, which is presented more as a general prognostic survey than as infallible conclusions.

The results of this study suggest that SLE under present management is no longer a rapidly fatal disease. Recent reports of favorable survival time in SLE include patients who for the most part have received adrenocorticoid therapy. Rupe and coworkers[19] reported a survival time longer than ten years in more than half his series of 100 patients of whom all but seven received adrenocorticoids. Additional evidence of its long term benefits in the treatment of SLE is found in the series by Soffer and coworkers,[24] Haserick,[8] McCombs and Patterson,[15] Jalil and coworkers[10] and Dubois.[5]

While data from the entire series (Chart 1) indicates an appreciable difference between the survival time of the treated and the control groups, adrenocorticoid therapy is not strongly impressive as a truly effective medication. The life tables separating the series population according to type of onset, as in Figure 2, give more significant and more useful information, and tend to be more accurate for reasons listed in the method of study. Harvey and coworkers[7] reported a significant difference in survivorship in favor of cases with longer intervals between onset and diagnosis while those patients with serious symptoms at the onset appeared to have more rapid progression of disease. Their finding is paralleled in this study.

The nearly identical survival time of treated and control patients in the *mild* classification would indicate that adrenocorticoids are of little or no benefit in this particular group. Limiting therapy to rest and salicylates in mild cases of SLE, as recommended by Dubois,[5] would certainly be warranted. The rather noticeable difference in survival time in the group of *moderate* cases would support the use of adrenocorticoids for this group. Although every patient except two in the *severe* group died within five years of onset regardless of the form of therapy, the survival time did appear to favor the treated patients. There is no question that intensive adrenocorticoid therapy is justified in this group. Pollak and coworkers[17] have recommended prednisone in doses of 40 to 100 mg daily in order to effectively suppress all signs of disease activity.

A review of the autopsy data in Table 4 reveals very little difference between the treated and control patients who died, with the exception of the lower incidence of Libman-Sacks endocarditis among the patients who received treatment. Whether the anti-inflammatory effect of adrenocorticoid therapy was instrumental in reducing the frequency of verrucous vegetations is an interesting speculation. While more patients in the treated group apparently died of uremia, "wire-loop" kidney was found in 10 per cent more of the untreated cases. Of the nine patients treated with adrenocorticoids who died of uremia, seven began taking the steroid after abnormal renal findings were detected aand there was no evidence in the medical records that the use of them aggravated the renal disease. Pollak and coworkers,[17] in a study of 33 patients with renal lesions of SLE, reported that very high adrenocorticoid doses produced in many cases striking prolongation of life span and improvement of renal lesions.

Major bacterial infection was present post mortem in the same frequency among both the treated and control patients, thus absolving the adrenocorticoids of blame for the spread of infection in all instances.

It is concluded that this study verifies clinical impressions of recent years that corticotropin and adrenocorticoid therapy prolongs life in certain cases of SLE. Such treatment can by no means be considered the final answer in this perplexing disease, which will probably remain incurable until the pathogenesis is better understood.

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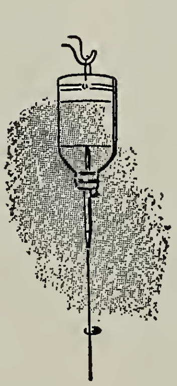

Cigarette Smoking and Cancer of the Lung

Is There Really Any Etiologic Relationship?

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• Many past, widely accepted medical beliefs have subsequently proved to be false. Although much has been written about possible causal relations of cigarette smoking to lung cancer, there is a good deal of evidence which does not fit this hypothesis.

This report summarizes some of the reasons for believing that cigarette smoking is not an important etiologic agent in lung cancer. Recent studies have reemphasized the importance of genetic factors, and a large number of significant psychologic variables between smokers and nonsmokers. The mounting evidence incriminating air pollution must also be borne in mind.

QUESTION: *What do these statements have in common?*

- Scrofula is cured "by the laying on of royal hands."
- Phlebotomy, leeches, and cupping help paralysis, headache, cough, cholera, and epilepsy.
- Pellagra is an infection.
- Blood passes from right to left side of heart through invisible pores.
- A good treatment for tuberculosis is horseback riding.
- Gout is manifestly an affection of the nervous system.
- Typhoid and typhus are but varieties of the same fever.
- Proper treatment for fevers is a low diet, heavy purging with calomel and jalap, and bleeding to the point of faintness.

ANSWER: They were all believed correct by leading members of the medical profession at one time, but were later proved to be false.

To this list may be added the statement that cigarette smoking causes lung cancer.

At a medical meeting in Chicago in June 1962, a prominent medical discussant made sarcastic and vitriolic comments about cigarette smoking and lung cancer. Clearly, the speaker could not be considered a true scientist with an open mind, and he sounded like an evangelist.

There has been a virtual flood of literature "associating" cigarette smoking with lung cancer. Determination of precise causal factors of lung cancer must explain numerous findings such as:

1. Berkson's excellent articles which question the statistical validity of the voluminous literature on cigarette smoking and carcinoma of the lung circulating in the United States and England.[5]

2. "The rate for the non-white in the eight metropolitan countries was 112 and for the white 105 per 100,000 males age 45 and over, 'although the whites smoke twice as much as non-whites.' Again, this implies that smoking, by itself, is not the sole factor influencing the occurrence of lung cancer."[4]

3. Less widely publicized is the fact that mortality rates for lung cancer among urban dwellers are significantly higher than among strictly comparable rural groups, *smoking habits notwithstanding*. Statistical studies now under way show possible parallels between lung cancer rates and air-pollution indices."[25] (Italics mine.)

4. Immigrants (e.g., to New Zealand from the United Kingdom) are more susceptible to cancer of the lung than are native New Zealanders.[3] Mexican-born women who settle in Los Angeles develop lung cancer more frequently than American-born Mexican and white women living in the same city. Cancer of the lung is much more frequent among white immigrants to Mexico than among native Mestizos, and extremely rare among full blooded Indians. It has been suggested that different races have striking differences of habits, food, and exposure, and several studies have suggested that "food containing fats and rich in cholesterol become suspect of being carcinogenic."[3] Hieger has demonstrated the carcinogenic activity of cholesterol by inducing sarcomata in mice following injection of oily solutions of cholesterol.[3] German studies have revealed a correlation between the consumption of meat and the incidence of cancer. Consumption of

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pork, milk derivatives, animal fats, and oils was found to be statistically associated with carcinoma in general in man, whereas, meat from lamb, goat, and fowl was not.[3]

5. Various investigators have emphasized that a goodly part of the increase in the number of deaths from lung cancer over the past 25 years reflects merely the growth of population and the greater proportion of persons at the older ages. In addition, the magnitude of respiratory cancer death rates reported from different parts of the United States appears to be associated with quantity and quality of medical facilities available for accurate diagnosis of the disease. In England it has been shown that lung cancer mortality among men in the two highest social classes (professional, managerial, etc.) is significantly less than for other classes. This same trend is noted in the United States where the mortality rate for Metropolitan Life Insurance Company's "industrial" policyholders (mainly urban wage earners) is consistently higher than the rate for the general population and for "ordinary" policyholders (mainly middle and upper economic levels). Higher than average mortality for lung cancer has been noted in persons in certain occupations, such as painters, roofers, carpenters, tinsmiths, and electricians.[14] Is this related to industrial toxins?

6. "A review of the factors relating atmospheric pollution to lung cancer both on the epidemiologic and experimental levels warrants its incrimination as one of the dominant agents etiologically associated with the increase in mortality from lung cancer now being reported in various regions of the world."[13]

7. Bronchogenic carcinoma has been described in animals."[28]

8. Various investigators (Stocks, Hueper, Kotin, Shabad) have emphasized that atmospheric pollution and industrial dusts are more important lung carcinogens than is tobacco smoke.[19]

9. Garland summarized some questions raised by the thinking physician:

"Just prior to the turn of the century, tobacco was blamed for tuberculosis. He notes that examinations of the lungs of heavy cigarette smokers reveal precancerous changes in parts of the trachea and main bronchi where primary lung cancer is relatively uncommon. He knows that evidence obtained on animals is not directly translatable to man. He knows that the controls in any large population study are of debatable quality; it is virtually impossible to match two groups of adults in temperament as well as age and habits. He wonders why primary lung cancer should be twice as common in British men as in American men, although cigarette consumption is only about half as great in England as in the United States. He notes the paradox in the figures relative to inhaling and lung cancer, and is interested in the increasing incrimination of other air pollutants as significant cocarcinogens in our smog-laden cities."[9]

10. "Lung cancer in many, if not most, cases arises in a previously diseased organ." Thus, 65 per cent of a group of 63 patients with lung cancer were found to have had long standing chronic bronchitis.[7]

11. Increasing lung cancer has been noted both in countries where cigarette consumption has gone up tremendously, as the United States of America, Canada, and Italy, and also in countries as Germany, Austria, Turkey, and Japan where cigarette consumption has been fairly static.[21]

12. In East Pakistan, of 20 patients with bronchogenic carcinoma all but two came from rural areas. Of the 20 patients, 14 did not smoke and four smoked only very occasionally.[12]

13. Although skin cancer has been produced when tobacco-tar concentrate has been painted on the back of a particular strain of mice,[29] some investigators (Helwig, Bogen, Flory) have been unable to produce carcinoma in animals, or at best only rarely (Cooper, Sugiura).[21]

14. After a very thorough review of the literature, Rosenblatt and Lisa[21] noted: "The explanation that [lung cancer] is due to a greater smoking habit among males is highly improbable. It has also been suggested that the greater susceptibility of the male is due to a sex-linked character. Necropsy reports have shown differences in pathological behavior of the disease among males and females. According to Fried, the reason for male preponderance lies in the fact that bronchogenic carcinoma is a disease of late adult life. The incidence of cancer is high in females, but it usually occurs at an earlier age with mammary or genital involvement. Many females who are susceptible to cancer are thereby eliminated from acquiring lung cancer, because they do not reach the age group in which the condition is commonly found."

15. Malignant intra-thoracic tumors have been induced in laboratory animals using human adenovirus.[27]

16. "Lung cancer is predominantly a disease of males, and the attempts to attribute this sexual favoritism to smoking are amusing. The sex ratio favored males before cigarette smoking became popular and it has continued so, despite the prodigious increase in smoking among women. Lung cancer also occurs in areas where cigarette smoking is virtually unknown."[20]

17. Painting an acetone solution of benzanthracene on the mucous membranes of the check pouches

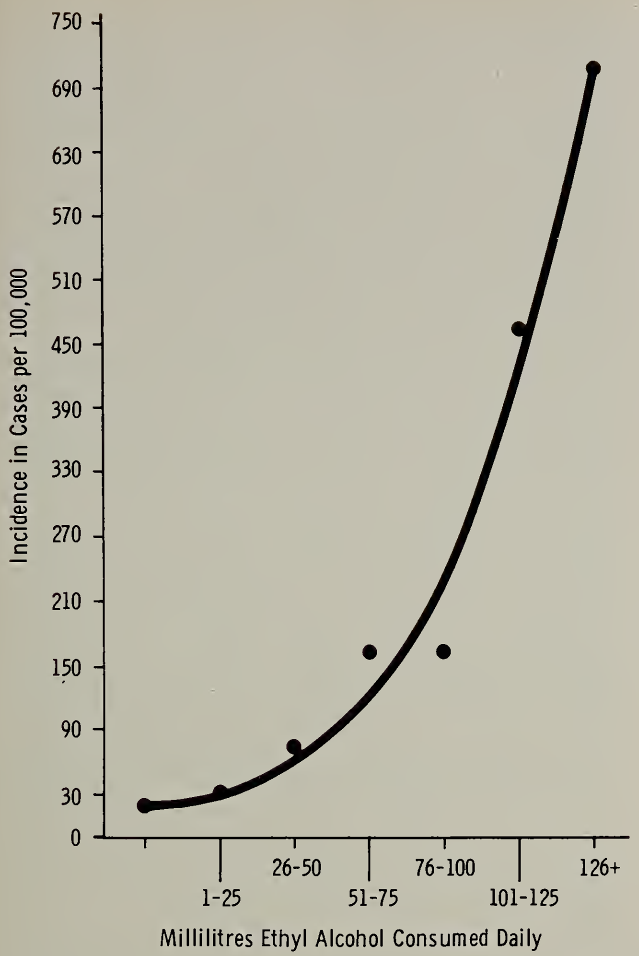

Chart 1.—Correlation of incidence of pulmonary tuberculosis with alcohol consumed daily.

of golden hamsters produced squamous cell carcinomas in 86 per cent of 72 animals. An acetone extract of tobacco painted in a similar fashion did not produce any cancer even after 70 weeks.[1,2]

18. Chart 1 correlates the incidence of pulmonary tuberculosis to the amount of alcohol consumed. Since tuberculosis is known to be caused by tubercle bacilli, however, no one uses these data to say that alcoholism causes tuberculosis.[6] Chart 2 correlates the incidence of lung cancer to the number of cigarettes smoked, and such data have been used to emphasize the possibility that cigarette smoking may cause lung cancer.[16]

19. Speaking of chronic bronchitis and air pollution, McDermott stated: "It is not enough, however, merely to show that the incidence of pulmonary disease has been rising along with pollution. The conscientious investigator must seek out the chain of cause and effect. And the responsible public health official needs better evidence to justify the social cost of control measures."[17] This statement applies equally well to lung cancer and cigarette smoking.

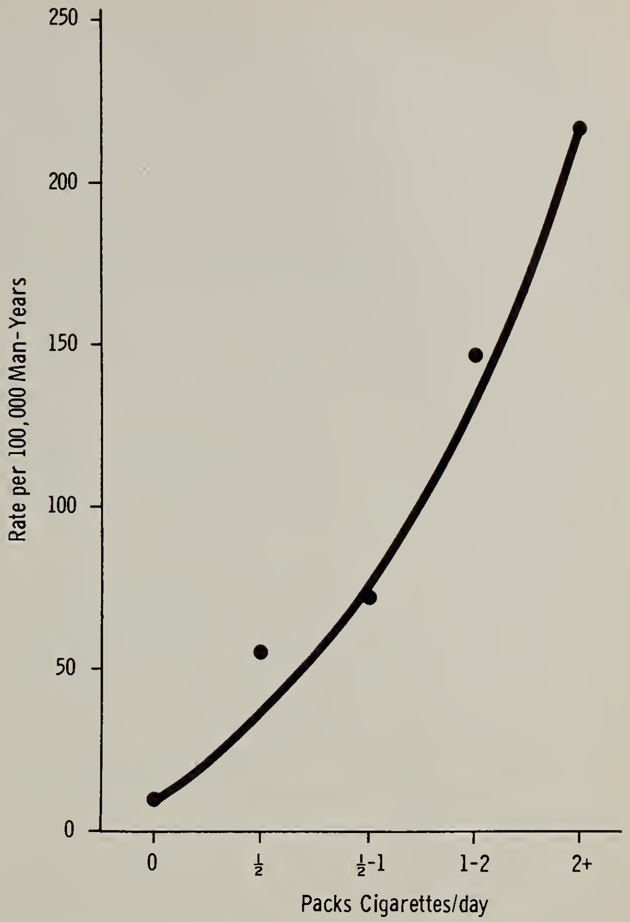

Chart 2.—Correlation of incidence of lung cancer with cigarettes smoked daily.

20. Smokers differ from non-smokers "on such personal and psychological variables as: (1) age, (2) sex, (3) marital status, (4) occupational class (within certain limits), (5) urban versus rural residence, (6) annual income, (7) body-sway suggestibility, (8) frequency of automobile driving accidents, (9) anxiety level, (10) number of psychosomatic symptoms, as well as overall level of psychological tension, (11) number of cups of coffee consumed per day, (12) amount of liquor consumed, (13) early life experience, religious background, social mobility, college major, life career choice, military experience, restlessness, independence, variability, and several other variables."[22] Any one or several of these variables can be of greater importance than cigarette smoking, which may simply be an associated, somewhat parallel, variable.

21. It must constantly be borne in mind that "subjective bias plays an important role in the writing of research papers as well as in the collection of data, but there is no double-blind test to exclude it."[11]

22. Nowhere has it been shown that the heavy cigarette smoker is stricken with lung cancer earlier

than the light or non-smoker. If lung cancer in smokers is a result of direct carcinogenic action, one would certainly expect this to happen. In South Africa, where the average white male is one of the heaviest smokers in the world, the age specific death rate from carcinoma of the lung is, if anything, less than that in Denmark, where the average male smokes less than one-third as many cigarettes. This same inverse relationship applies to the United Kingdom and Australia. In the United Kingdom, males smoke fewer cigarettes but have more than three times as much lung cancer as males in Australia.[18]

23. Tokuhata[26] of USPHS, Division of Chronic Diseases, found evidence of a familial factor of "host susceptibility" which increases mortality rate 300 per cent—even in non-smokers.

24. Lubs[15] at the Veterans Administration Hospital, West Haven, Connecticut, examined chromosomes from solid tumors and found abnormalities in every case. "Results strongly support the thesis that chromosome abnormalities play a significant role in most types of cancer," he said.

25. Gilliam[10] of the USPHS showed that a large part, if not most, of the apparent increase in certification of death due to lung cancer can be accounted for by changes in medical practice and death certification. Furthermore, despite steadily increasing cigarette smoking annually, there has been a general decline in rates of increase of mortality attributed to lung cancer for all groups—whites and nonwhites, males and females, and for all ages.

26. Spain[24] found several confusing and disturbing features in the observations of Auerbach and his associates which tend to diminish the significance of their conclusions. Among these, "is the observation of a number of cases of carcinoma-in-situ in the tracheal mucosa, despite the fact that primary carcinoma of the trachea is extremely rare in this part of the world. Another is the finding of carcinoma-in-situ in as high an incidence as one of four non-cigarette-smoking males. This also is in sharp contrast to the relatively infrequent occurrence of bronchogenic carcinoma in the non-smoking male. Still another is the observation that these alterations revealed no predilection for the larger bronchi where the major sites for primary carcinoma are located. Then, there was the *implication* that the lesions perhaps progressed through stages of basal cell hyperplasia, stratification, metaplasia, and into carcinoma-in-situ." (Italics mine.)

27. A study of 922 college men was made relating their morphological characteristics as students to their subsequent history of smoking 13 years after graduation. "It is clearly evident from the data presented in this paper that smokers as a group differ in their morphological characteristics as young adults from non-smokers. The differences between them are consistent, substantial, and pertain to both dimensions and proportions." These data are highly suggestive of genotypic deviations in the various groups, present for the most part before the acquisition of smoking habits. Seltzer[23] said: "Factors other than smoking should not be overlooked in a search for a full understanding of the causes of the disease in question" (i.e., lung cancer).

28. Fisher[8] suggested that both the practice of cigarette smoking and the incidence of lung cancer may be largely influenced by the individual genotype. He pointed out that various data indicate that those who inhale cigarette smoke have a lower incidence of lung cancer than those who do not, which is a surprising finding. "There is," he said, "nothing to stop those who greatly desire it from believing that lung cancer is caused by smoking cigarettes. To believe this, however, is to run the risk of failing to recognize, and therefore failing to prevent, other and more genuine causes." This is most important, and the main reason for this report.

It is hoped that this note will stimulate physicians to keep an open mind on the causes of lung cancer. One wonders whether if there were less heat on the subject of cigarette smoking, there might be more light on the etiology of this neoplasm.

The above comments should in no way be construed as an argument for smoking, but refer only to the relationship of cigarette smoking and lung cancer. There is no doubt that cigarette smoking may be harmful for certain people such as those with pulmonary emphysema, bronchial asthma, and whenever smoking produces cough and sputum smoking does not appear to do any good. However, the causal relationship of cigarette smoking to lung cancer is certainly unproved.

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Anginal Syndrome

Treatment with a Long-Acting Nitrate (Itramin Tosylate)

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• Preliminary studies in eighteen patients with 2-aminoethylnitrate-p-toluene-sulphonate (itramin tosylate) indicate that this organic nitrate is effective and well tolerated for the treatment of the anginal syndrome.

Although the dosage should be determined on an individual basis, the administration of a chewing tablet, containing 4 mg. of the medication, appears to be satisfactory.

THE PURPOSE of this report is to present our experiences with a new organic nitrate which appears to be safe and effective for the treatment of the anginal syndrome. Although the pharmacological properties of 2-aminoethylnitrate were reported as early as 1947,[5] it was not until 1961 that studies by Ejrup and Kumlin[6] and Ruskin[7] indicated the clinical value of this preparation. The p-toluene-sulphonate salt of this nitrate is not only less toxic than other organic nitrates,[5] but the availability of a chewing tablet which is well tolerated facilitates the rapidity of effect—as well as the ease of administration.

This study followed the concepts applied in the appraisal of other drugs used for the treatment of the anginal syndrome.[1,2] The subjectivity of the painful anginal syndrome also required that the method of evaluation follow the principles that are applicable for the investigation of any analgesic medication.[3,4]

Eighteen patients with angina pectoris were selected for the clinical trial with itramin tosylate.* They had been under observation for several months or years before being chosen for this study. All patients had been thoroughly screened to exclude those with chest pain unrelated to coronary insufficiency. Previous experience with these patients, in numerous trials with other medications advocated for the anginal syndrome, ensured the cooperativeness and patient-physician rapport which is essential for accurate observation.

The patients were accustomed to routine questioning and to keeping individual records regarding the frequency and severity of their attacks. Therefore, their glyceryl trinitrate requirements and the status of their underlying heart disease were well known.

Two dosage strengths of itramin tosylate were studied. Eleven patients began therapy by chewing a tablet, containing 2 mg of the drug, every four hours for four daily doses. After a suitable period of observation ranging from two to five weeks, the dose was increased to the 4 mg tablet four times daily. Seven of the 18 patients took 4 mg tablets four times a day from the outset.

In each case the duration of therapy was dependent upon the effectiveness attained. A period of two to three weeks was considered sufficient time to note the effect upon the frequency and severity of the angina pectoris. When possible the effective dose (either 2 or 4 mg) was continued for approximately three months to note any evidence of the occurrence of tolerance and cumulative adverse effects.

Six patients, who had a favorable response, continued therapy with a substituted placebo chewing tablet identical in appearance to the tablet containing the medication. They were not told of the change to placebo.

Patients were required to keep a daily record of the occurrence of anginal attacks. In these records they noted the frequency and severity of attacks, as well as the use of glyceryl trinitrate. The records were reviewed at each clinic visit. At that time the patients were given a supply of tablets sufficient to last until the next clinic appointment. (The time interval between these visits ranged from one to three weeks.)

RESULTS

Although the 2 mg dosage level was satisfactory in controlling the frequency and severity of the anginal syndrome in five of the eleven patients treated, it was not considered to be optimum on the basis of achieving an adequate predictable response. The administration of the 4 mg dose in these same eleven patients resulted in a satisfactory or greater response in four patients and continuation of a

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*The preparation known as TOSTRAM® was supplied, as a chewing tablet, by U.S. Vitamin & Pharmaceutical Corporation, New York, N. Y.

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similar (and satisfactory) response in three patients. Four patients did not respond to either dose.

In 12 of the 18 cases in which trial with the 4 mg dose was carried out, control of anginal complaints was achieved. The response in these patients was greater than that previously observed with the use of pentaerythritol tetranitrate or various xanthine preparations.

Untoward reactions of a mild type (nausea and lightheadedness) were noted in only two patients receiving the 4 mg dose. The patient with nausea continued the medication for four weeks. For the one with the feeling of lightheadedness, the dose was reduced to 2 mg four times daily. This dosage was taken for 17 weeks with satisfactory relief. The patients who were treated with 4 mg four times a day for approximately three months continued to respond without development of tolerance or cumulative adverse effects to the medication.

Five of the six patients who were observed on placebo therapy, after an effective trial with 4 mg tablets had prompt recurrence of anginal pain as frequent and severe as before.

DISCUSSION

This preliminary evaluation of 2-aminoethylnitrate-p-toluene-sulphonate accords with the results of other investigators[6,7] relative to the effectiveness and safety of this drug for the treatment of the anginal syndrome. Until definitive therapy is available, the major therapeutic problem depends upon the use of a medication which will decrease the frequency and severity of the anginal attacks. The procedure that brings about therapeutic benefit may be one of several. The action for any particular medication might not be fully known and yet the drug be clinically useful because of its effectiveness and safety in the prevention of painful seizures.

This is the case with nitrate preparations. The exact mechanism of action is still unknown. This lack of knowledge does not, however, detract from their usefulness. The search for long-acting nitrates, with a minimal occurrence of tolerance and cumulative toxicity, has been in progress since the introduction of amyl nitrate and glyceryl trinitrate. Many products have been evaluated and discarded. The utilization of the toluene sulphonate salt of 2-aminoethylnitrate satisfies the prerequisites for a long-acting, effective, and well-tolerated organic nitrate for the usual patient with coronary insufficiency.

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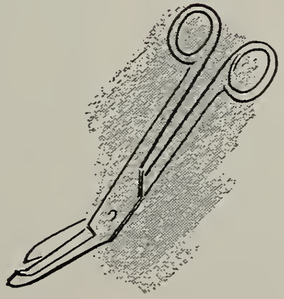

Mental Disorders of the Aged

The Role of the State Hospital in the Treatment; Report of a Pilot Study

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• The number of patients age 65 and over at the Agnews State Hospital now constitutes over one-third of the resident population. The geriatric population is increasing in all California state hospitals.

Because this is a relatively new area of concern for the psychiatric institution, the role of the state hospital in the care of the aged is not yet clearly defined.

A pilot study of admissions in this age group committed from one county during a 12-month period was undertaken, with an attempt made to evaluate the suitability of the patient for commitment, as well as special problems in admission, treatment during hospitalization, and release from the hospital. The study indicated 42 per cent of persons admitted were considered unsuitable for commitment. Physical illness was found to be a major factor in precipitating admission and a predominating factor in the treatment program after admission. Almost 40 per cent of the patients died within a year after admission.

IT HAS BECOME URGENT to clarify the role of the state psychiatric hospital in the care of senescent patients with mental disorders as the number of patients in the older age group increases. The magnitude of the problem is indicated in a report by the Department of Mental Hygiene in 1959[3] stating that the number of patients, aged 65 and over, in California state mental hospitals had increased from 18 per cent of the total hospital population in 1941 to over 30 per cent in 1957. Current statistics indicate the proportion of patients within this age group at the Agnews State Hospital is over 39 per cent.

It is assumed that the criteria for commitment for the elderly patients should be essentially the same as for the younger patients—that is to say, persons with harmless chronic mental illness should not be confined to a state institution. The Department of Mental Hygiene in the past several years has reinforced this concept by communications to boards of supervisors, superior court judges, district attorneys and others, stating, for example: "An aged person who merely suffers from loss of memory, is childish, irritable, restless, careless in toilet habits, or in need of hospitalization for physical ailments is not qualified for state hospitalization. On the other hand, an elderly person who is markedly delirious, depressed, destructive, paranoid or threatening, may be properly considered for commitment to a state hospital."[4]

Previous studies have been widely discrepant in estimation of geriatric patients unnecessarily committed to state hospitals.[2,6] We accordingly decided to undertake a pilot study of patients committed from one county, in an attempt to obtain information on the following general questions: (1) How many geriatric patients were inappropriately committed? (2) What factors other than senile mental changes tend to precipitate commitment? (3) What efforts are made at the community level to avoid commitment? and (4) What are some of the problems in getting the inappropriately committed patients back to the community?

The selection of the particular county surveyed in this report was based on several reasons. The county was close enough to the hospital to facilitate communication, and had already expressed interest in closer liaison in the after-care of non-geriatric patients through the services of the county hospital. It has a wide range of programs in the area of health and welfare services. Finally, the selection was made because a statistical report from the Department of Mental Hygiene for the fiscal year 1958 revealed that a relatively high proportion of the total number of patients sent from that county for that year were geriatric patients—24 per cent as compared with a state average of 14.8 per cent.[5]

A schedule was developed on which items of information were entered for each patient, 65 years of age or over, entering the hospital from that county from February 1, 1959, through July 31, 1959. In addition to certain identifying information, the medical psychiatric diagnosis by the county and by the hospital were entered. The

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Submitted April 12, 1962.

principal point of information, however, was the description of the patient's behavior and physical and mental status given by the county as the basis for requesting care in a state mental hospital, and the same kind of statement entered in the patient's chart by the hospital at the time of, and following, admission. In addition to this, the continued observation of the patient was noted by other staff physicians and psychiatrists as the patient moved from admission service to the various wards. Each of the patients, after summary of the above data, was placed in one of the four classifications:

1. *Concur:* The observation and evaluation of the patient by the hospital medical staff was essentially the same as the evaluation and description given by the county as the basis for commitment.
2. *Non-Concur:* The patient did not present the kind or degree of symptoms or behavior as described by the county nor the kind or degree of symptoms and behavior to qualify the patient for commitment to a state hospital.
3. *Doubt:* Patients in which the question of appropriateness of the commitment was not clear. This classification was included in order to provide the fullest opportunity for conservativeness in the evaluation. That is, while the patient did not appear to present the degree of symptoms or specific evidence of behavior to qualify for admission to a state hospital, there was some basis for the hospital personnel being hesitant, at that time, to say the patient could be cared for in a non-psychiatric facility.
4. *Not Classified:* This category was established for those cases not pertinent to the purposes of this study—commitment for alcoholism or the occasional voluntary admission are examples.

The age range for the classified patients was 65 to 89 years. The median age was 75. Fifty-five patients in the selected age group were admitted from this county during the first six-month period. Eight were not classified for reasons previously noted. As to the remaining 47 patients, the hospital concurred in 15 instances (32 per cent) with the county's basis for requesting hospitalization. In eight cases (17 per cent), there was basis for doubt. Two instances of statements forwarded by the county compared with the statements of the state hospital staff with respect to those patients, where there was "nonconcurrence," should serve to illustrate the material on which this classification was made.

Patient 1. A woman 75 years of age

County Descriptive Evaluation

Management problem in nursing home. Nearly blind. Belligerent and has been under heavy sedation. Nursing home reports patient fights with other patients and staff with fists. Gets into others' belongings. Is insulting. Heavy sedation at home possibly injurious to patient's physical condition.

Hospital Descriptive Evaluation

Bedridden due to emaciation and extreme weakness. Memory spotty. Cooperative and non-resistive. Disoriented for time and place. Patient will require continuous hospital care, chiefly for medical reasons. Seems principal reason for her "agitation" was probably her critical physical condition.

Patient 2. A woman 77 years of age

County Descriptive Evaluation

Has become progressively more confused and senile for past three years. Marked memory impairment, some speech difficulty, suspicious of surroundings. Becomes agitated and angry and has been uncontrollable. Episodes of marked hostility coupled with uncontrollable behavior.

Hospital Descriptive Evaluation

Patient appears pleasant and cooperative. Speaks in stuttering fashion and is rambling and repetitive. Disoriented and shows memory impairment. Physical condition appears good and patient ambulates well. Neatly groomed.

* * *

A comparison was made between the two types of admissions involved in this study—that is, by court commitment and by health officer application. In the latter instance, the procedures are less formal. Most important to the consideration of this study is the fact that the patient admitted by health officer application usually has not been in residence in the psychiatric ward of the county hospital. Therefore the diagnostic and evaluative work may not be as comprehensive or the criteria as uniform. It would be anticipated that a substantial portion of the inappropriate admissions to the state hospital would be by way of the health officer application, on the assumption that county hospital criteria as to need for state hospital care would more consistently approximate the criteria of the Department of Mental Hygiene. In the group of patients in this study, this was not the case. Of the mentally ill court-committed patients 50 per cent fell into the *non-concur* classification, whereas 53 per cent of the patients admitted by health officer application were in this category.

A second part of this study was done in 1961. It consisted of a review of the admissions from the same county for the six months of August 1, 1959, through January 31, 1960, with classification as in the first six-month study. During the interval between these two parts of the study, attempts were made to establish better contact with the public health authorities of the county, both through efforts of the Department of Mental Hygiene Bureau of Social Work located within the county, and directly from the hospital. Several meetings were held between county and state hospital administrative staff in an effort to clarify the mutual responsibility of caring for the senile patient. Tabulation of the data on the second six-month period therefore was undertaken also as a possible indication as to whether the effort to improve county-state hospital communications had helped to bring about better agreement as to the type of patient suitable for commitment.

There were 39 patients 65 years of age or older among the patients committed from the county from August 1959 through January 1960, voluntary and alcoholic commitments excepted, as in the first group. Classification of these cases was as follows: 15 cases (38 per cent) were rated *concur*, 12 cases (31 per cent) *doubt* and 12 cases (31 per cent) *non-concur*. In other words, although the percentage in which there was agreement between the county authorities and the hospital staff regarding the need for commitment remained virtually the same (31 per cent and 38 per cent), the number of cases where the notes of the hospital staff seemed clearly to deny the need for commitment dropped from 51 per cent in the first six-month group to 31 per cent in the second. However, the *doubt* group was larger. For the most part the patients so classified were described as noisy at night, verbally abusive or delusional but were physically disabled to the degree they could not be considered a danger to anyone. The state hospital staff and the county physicians appeared to agree on the description of these patients but differed in opinion as to the place in which the necessary total nursing care should be administered. We concluded that the efforts made during the first six-month study had resulted in somewhat better understanding on the type of patient for commitment.

On final résumé of the 86 admissions from the selected county during the 12-month period spanned by the first and second parts of the study, there were 30 cases (34 per cent) in which there was agreement as to the need for commitment, 36 (42 per cent) in which the hospital staff felt the patient's condition was such that the proper supervision and care could be provided elsewhere, and 20 (23 per cent) in which the need for commitment seemed doubtful.

Thirty-four (39.6 per cent) had died within the follow-up period of one year after admission (there were seven additional deaths among the group for which an 18-month follow-up was available). The median length of time in hospital from admission to the time of death was between two and three months. Six patients died within two weeks of admission and 11 within four weeks. Causes of death given by the attending ward physicians did not differ significantly from those listed for the hospital geriatric population generally, pulmonary infection and cardiac disease being listed most frequently, with urinary tract disorder and uremia given in three of the male patients as principal cause of death.

Fourteen patients were subjected to major surgical procedures, including nine open reductions of hip fractures. A serious medical problem, exclusive of terminal illness, occurred in 43 patients (50 per cent). Included here were diabetes, acute cardiac decompensation, pneumonitis, acute cellulitis, massive rectal bleeding and glaucoma. In addition there were numerous minor physical illnesses and x-ray and laboratory or other diagnostic work-up which were not tabulated in detail. The strain of the increased number of illness-prone and accident-prone elderly patients on a budget of sixteen dollars per patient bed per year (at the time of survey) for all medical and surgical supplies was great. In this regard we would add parenthetically that 50.6 per cent of all major surgical procedures done at Agnews in 1961 were on patients age 65 or over.

The schedule for tabulation of information on the total group called for comparison of the psychiatric diagnosis given by the county and later by the hospital staff; the same was planned for physical diagnosis. This could not be done however, because of disparity of terminology in the psychiatric diagnosis, the county physicians jotting down "CBS" [for "chronic brain syndrome"] or "senility" or "senile psychosis" in the usual case. Sometimes no diagnosis was offered—a descriptive phrase being substituted, such as "broke window," or "antagonistic and combative." This is probably explained by the fact the examining physicians are unfamiliar with the official psychiatric diagnostic terminology, as there appeared to be generally good agreement when patients were committed through the county hospital, where a psychiatrist made the diagnosis. The county psychiatric staff tended to favor the diagnosis "chronic brain syndrome with senile brain disease with psychotic reaction," while the state hospital staff more often preferred the qualifying phrase, "with behavioral reaction." Again the physical condition was often described by one word or a brief phrase such as "fair," "good," "senile," "essentially negative," "heart and lungs negative," "anemia." In some instances it was felt that a definite hardship to the patient had resulted from just this lack of information when acute symptoms developed after hospital admission that might have been prevented if more information regarding diagnostic work-up, medication, and the like had been forwarded with the patient.

At the time of admission, three patients were found to have blood sugar content so high that treatment was needed. Eleven were severely hypertensive. In one a toxic thyroid nodule was noted, and one patient had acute pneumonitis. There were notations of generalized edema in three patients, prostatic hypertrophy with elevation of the blood urea nitrogen in three, signs of cardiac decompensation in seven. Nine patients were noted to be too feeble to stand. One had carcinoma of the lung with metastasis. Another was comatose on arrival and died eight days later.

At the end of the year follow-up period, 18 patients had been placed on leave of absence or discharged from the hospital. The number of leaves was essentially the same for the *concur* groups as the *non-concur*. Four of the 18 patients on leave were returned to the hospital, two then being released again. Among the patients successfully placed on leave, ten were discharged to their families, one went to another county hospital, six were placed in nursing homes through the joint endeavors of the hospital social service staff and the patient's family. Of these six, four had been in nursing homes before commitment, suggesting that further assistance to the family from a trained social worker in locating a nursing home more in keeping with the patient's needs might have avoided commitment had it been offered at the county level. There was no difference in the number of patients who had previously been tried in a nursing home in the *non-concur* group as compared with the *concur* group.

DISCUSSION

Although it seems possible the particular county chosen for study uses the state hospital as a resource for the severely disabled more than some of the other counties committing to Agnews, the observation regarding these cases has been pretty general with regard to elderly patients admitted to Agnews, in that almost without exception the symptoms and behavior changes exhibited are those of severe, incapacitating mental confusion and disorientation. One reads a great deal about enthusiastic plans for "senior citizen" programs and the prevention of deterioration by recreational and socialization facilities, all of which may be valuable with another group of elderly persons, but the patients in the over 65 age group admitted to Agnews are almost overwhelmingly in need of total supervisory care, with the attention of the psychiatric ward personnel directed toward dressing, bathing and feeding patients who are too feeble physically or too disorganized mentally to help themselves adequately. For example, out of the total group of 86 reviewed in this study, only one was well enough to attend an off-ward occupational therapy clinic.

This study tends to confirm that physical illness as a factor in precipitating commitments is of major importance, as has been suggested in other studies.[1,7]

It was felt there were problems associated with planning of release for the elderly patients which differed in many respects from that for younger patients. Members of the state hospital staff frequently express concern about a suggestion for moving an aged and infirm person. Families of elderly patients are often reluctant to remove the patient when they observe that good medical and nursing care is being provided. Understandably, they are not concerned with the technicalities which distinguish eligibility for one type of facility from that of another. Among the few, rather standard, possibilities for placement of an elderly patient from the state hospital, the private, licensed nursing home is the most prominent. Here, as in other types of care, a range of eligibility requirements must be considered. The psychiatric diagnosis of a patient is an ever-present consideration even though the patient has become relatively symptom free. Nursing homes are rarely equipped to care for patients presenting behavior-management problems. Confused wandering or collecting the belongings of other patients are examples of unacceptable behavior. Other facilities, such as homes licensed for "light mental" patients are limited in number and vary widely in eligibility requirements based on age, sex, veteran status, and the like. Most facilities, whatever their nature, are relatively expensive and beyond the means of many elderly state hospital patients or their families. When county financial assistance is indicated, there may be additional requirements to be met, such as county residence or competence of the patient, and guardianship. Then, too, counties differ in their policies with respect to expenditure of local funds. All in all, a patient can be disqualified for placement quite easily when faced with a complex constellation of limitations on eligibility.

A comment is in order here with reference to the general consideration of care of confused elderly persons. Whether the patient is one with a geriatric mental disorder in which the intellectual impairment is minimal or has a profound degree of deterioration, there appear to be factors in the environment which can be therapeutic, with the goal either social rehabilitation and release from the hospital for the less impaired patient, or the more modest achievement of reduction in emotional turmoil, restlessness, hostility and agitation in the more seriously damaged patient. This is brought home most forcefully by the fairly frequent occasions in which a patient will do very well in the hospital, then undergo a recurrence of behavior disturbance when placed in a rest home or smaller institution, and again improve on return to the state hospital. A similar impression is often volunteered by members of the family as a reason for reluctance to take part in release plans again.

Informal survey among physicians, social workers, and nursing supervisors has consistently elicited opinion that certain nurses or psychiatric technicians excelled in working with senile patients, but there is no ready consensus as to what the effective personality characteristics of these individuals are. The nursing personnel in charge of wards generally rated as successful in maintaining a good milieu for the elderly patient were often quite unable to formulate any specific impressions about procedures or attitude conducive to improvement in the geriatric patient. However, we feel that some of the traditional routine of the state hospital, often that which is most objectionable to the younger patients, seems beneficial to the confused older patient. This adherence to routine has evolved from the necessity of "processing" large numbers of individuals through various daily activities such as meals, bathing and dressing, dispensing of medicine, store orders, mail and the like. The repetition of the activity at the same time and in the same manner, in the company of a large group of other patients, seems to be supportive to the confused elderly person. Other measures are the cultivation of an unhurried approach in dealing with the patient and the recognition of the patient as an individual with identity, while continuing to prompt the maintenance of routine.

These are obvious or "common sense" observations and there are surely many less obvious factors which can be separated out as common denominators in the successful management of the mentally disordered elderly person.

All the evidence points to the need for many more facilities for the treatment of the geriatric patient, either in large public institutions or otherwise. The state hospitals for the mentally ill, with already tremendous experience in this field, should be able to offer guidance in the type of facility, personnel, and other treatment modalities which will be most effective. Further studies to elucidate the "ideal" are strongly recommended.

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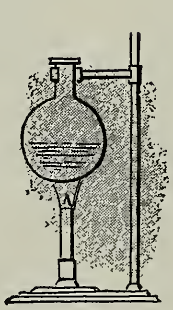

Physiologic Monitoring of Blood Glucose

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• The technique of continuous chemical analysis in vivo gives promise of real value in medicine. Applied to physiologic monitoring of blood glucose, it provides an invaluable tool for the study of labile diabetes and metabolic problems. Its use during surgical procedures and in postoperative management of such patients and in teaching is to be encouraged.

THE CONTINUOUS ANALYSIS of chemical fluctuation and interactions within live biologic systems will become increasingly important in medicine as time goes on. Even now, continuous chemical analysis is a practical procedure when a dual lumen catheter is introduced into the arm veins for continuous sampling. This paper deals with continuous blood glucose measurements in human volunteers.

Previous studies[1,5] had the disadvantage that they used moderately large amounts of blood. In the studies here reported the amount needed was greatly reduced. A double-lumen catheter was used, and through the outer lumen 0.6 cc of heparin was pumped to the distal end inside the vein. From that point the mixture of heparin and blood was pumped at a rate of 0.8 cc per minute through the inner tube of the catheter for passage through the Auto-Analyzer. By this method the amount of blood used was 0.2 cc per minute or 12 cc per hour instead of the 28.8 cc per hour used in previous work.[5] Using the smaller amount does not diminish accuracy. Indeed, with a simple manifold change, 0.1 cc of blood per minute or 6 cc per hour gives accurate results. Adding an extra dialyzing membrane to the dialyzer makes this possible. The dialyzer is composed of a matching pair of transparent plastic plates whose mated surfaces are mirror-grooved to provide a continuous channel when the plates are brought into contact. With a cellophane membrane sandwiched between them, the plates are clamped together, leaving the continuous pathway separated only by the semi-permeable membrane. The single dialyzer path is 87 inches long, affording a large surface presentation to the membrane. This is doubled with the use of the double dialyzing procedure and results in a considerable economy in the requirement for blood. A proportioning pump performs all the functions that ordinarily require manual pipetting, weighing and measuring. It pumps the dilute heparin mixture through the outer lumen of the tube to its end within the vein where it mixes with blood and then quickly transmits it back through the inner lumen to the Auto-Analyzer system. Seven minutes from the time of withdrawal of blood through the catheter, the finished result is noted on the chart paper of the recorder. That is how long it takes for passage of the blood sample from the vein to the pump of the Auto-Analyzer, through the dialyzer membrane and the heating bath to the colorimeter and recorder. With a single dialyzing membrane the time is approximately five minutes.

Types of Catheter Tubing

In the author's initial work, a dual polyethylene tube was used and inserted into an Intracath which in turn was inserted through a No. 14 needle. The Intracath tubing was used only once and the double lumen polyethylene tube was merely inserted to within one-sixteenth of an inch of the tip of the Intracath tubing. We had considerable success with this method in continuous monitoring of blood glucose. In five cases there was clotting which forced an interruption of the analytic procedure after periods of from 45 minutes to two hours. In studies on 15 volunteers, using a specially constructed double lumen catheter prepared from Silastic,* introduced directly through a No. 17 thin wall needle, no problem of clotting was encountered. Using this tubing, the process of continuous glucose analysis could go on for many days without difficulty due to clotting.[4] Advantages of Silastic over polyethylene tubing are that it is long-lived, is autoclavable and can be clamped repeatedly. In addition, it seems to be associated with a tendency to inhibit infection on its surface, and it does not cause severe reaction phlebitis such as sometimes occurs with polyethylene tubing. Owing to the ease of autoclaving, there is no danger of the transmission of infectious hepatitis such as was possible in previous work. Gas sterilization with ethylene oxide will prevent such infection with either type of tubing. The one disadvantage of

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Silastic is lack of rigidity, making insertion somewhat more difficult where extremely fine tubing is required. The use of a wire guide stiffener which is withdrawn as the tubing is introduced may help overcome this problem.

Method

The method used in monitoring of blood glucose was as follows: The patient's arm is prepared by thorough cleansing and the site superficially inoculated with procaine. A double lumen catheter is introduced into the vein through a No. 17 thin wall needle. After insertion, the needle is removed, leaving the catheter within the vein. None of the patients complained of pain. The technique, which seems formidable at first, is relatively simple once it is mastered.

The method employed is a modification of one proposed by Hoffman.[2] In it, glucose is determined by a direct reading procedure, utilizing the potassium ferricyanide oxidation reduction reaction. The yellow solution of potassium ferricyanide is reduced to the colorless ferrocyanide in the presence of potassium cyanide which acts as a sensitizing agent. The more glucose present, the more the yellow color is bleached. The color is measured at 420 mu, using a flow curvette which has a 3 or 6 mm light path.

Results

Chart 1 shows representative continuous monitoring curves of tolerance to ingested glucose by a normal person and one with diabetes. In this study, 32 such curves were recorded in 17 diabetic patients and 15 normal volunteers. The information obtained did not appear different from that afforded by intermittent measurement. However, fluctuations, peaks and minima were more faithfully recorded. Rapid intravenous glucose tolerance tests are useful where a disturbance in intestinal absorption is present or anticipated. Such a test was done with continuous monitoring in the case of a 30-year-old para II, six months pregnant, in which several oral glucose tolerance tests with adequate preparation were suggestive of diabetes (Chart 2). The intravenous glucose tolerance procedure, using the technique of continuous glucose measurement, should prove valuable in obstetrical diabetic screening. It is clear that an abnormal oral glucose tolerance test may not have the same significance during pregnancy that it does in the non-gravid state.[3,6] Continuous measurements offer the advantage of recording all of the information available without the need for frequent venipunctures during the short period of the test. Chart 3 shows representative continuous curves following the intravenous injection of 1.0 gm of free tolbutamide in diabetic and non-diabetic patients. In normal volunteers, a rapid drop in blood sugar was noted, indicating rapid insulin release. In two known diabetic patients, the much slower fall is faithfully recorded.

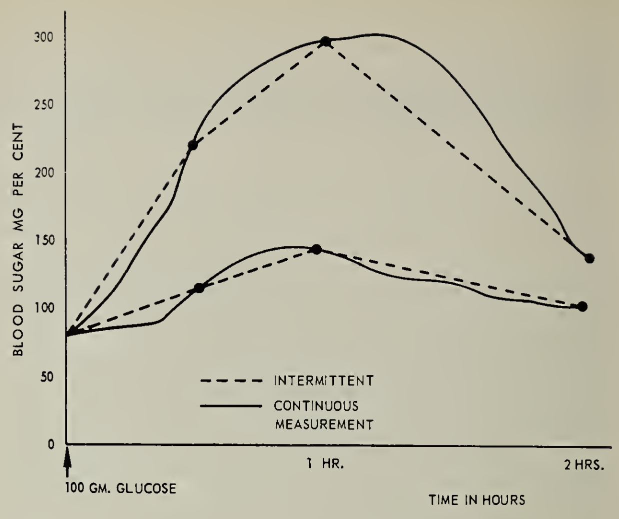

Chart 1.—Comparison of graphs of intermittent and continuous monitoring of blood sugar following administration of glucose to normal persons (lower lines) and diabetic patients (upper lines).

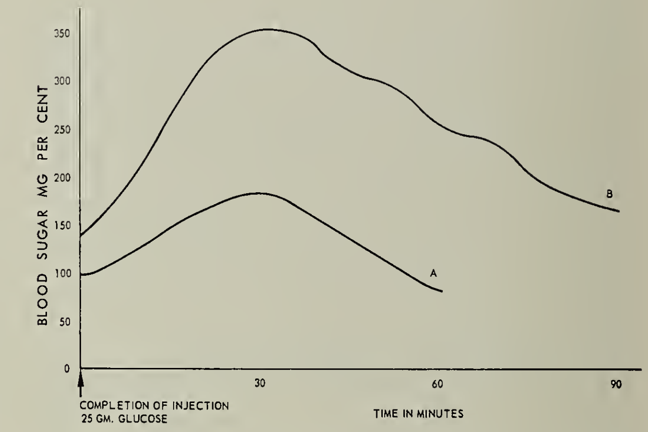

Chart 2.—Line A charts values noted in continuous monitoring of tolerance to injected glucose in a 30-year-old para II patient, six months pregnant, who had had tolerance tests to glucose by mouth that were suggestive of diabetes. Line B, for comparison, shows curve typical of diabetes.

DISCUSSION

Continuous chemical analysis in vivo is a practical research tool. It should be helpful as an adjunct in assessing blood glucose fluctuation and response to drugs and hormones. It provides a technique useful in regulating operative and post-operative management of labile diabetic patients, especially in improving the study and care of widely variable—"brittle"—diabetes. Modification of the techniques and instrumentation herein described suggests the

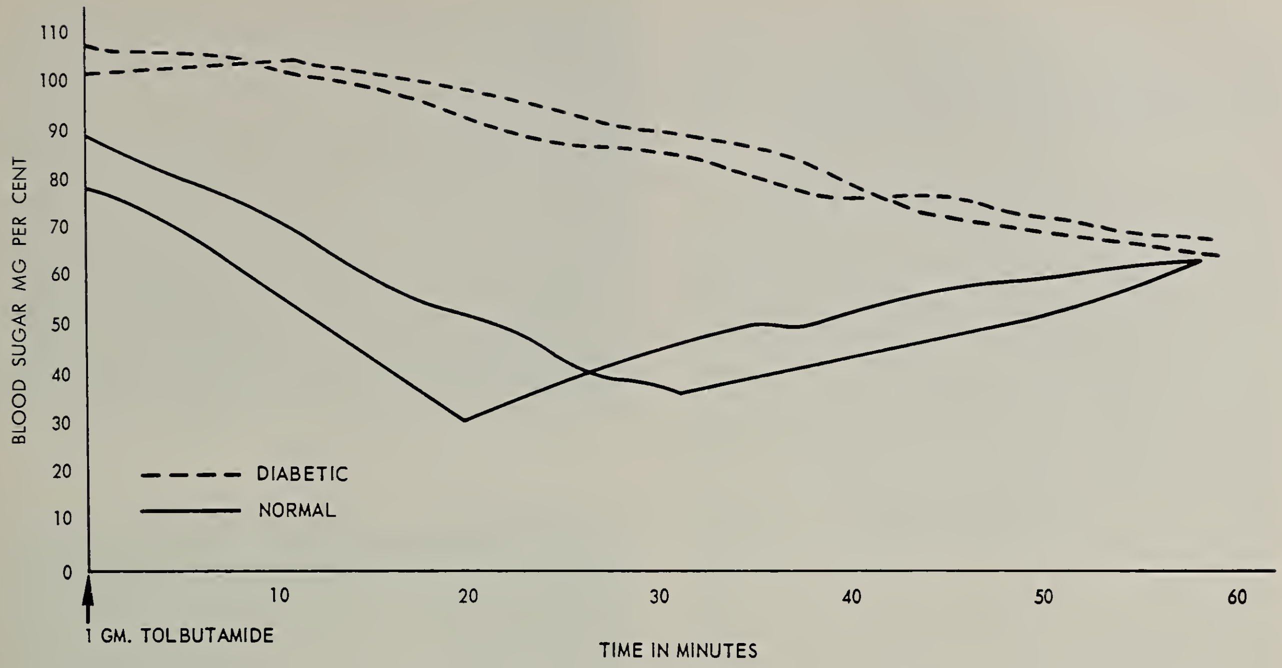

Chart 3.—Representative blood sugar curves in two diabetic and two normal persons after injections of tolbutamide.

possibility of a versatile system for recording a number of chemical variables simultaneously in patients requiring intensive study and surveillance. Another possibility is employment of an analog computer for continuous analysis of the variations in voltage taken directly from the recorder during the hook-up to experimental subjects. Such studies of complex fluctuations and interactions may lay the basis for mathematical models of physiologic functions. The procedure is ideally suited to intravenous glucose or tolbutamide tolerance tests.

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Rosacea-Like Demodicidosis

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• Rosacea-like demodicidosis is an entity resembling acne rosacea which is caused by infestation with an abnormally large number of the mite *Demodex folliculorum*, usually in association with improper cleansing of the face.

This condition responds promptly to external treatment consisting of daily cleaning of the face with soap and water and the application of a compound sulfur ointment over a period of a few weeks.

Occasional instances of a mixed-type of rosacea are encountered in which internal factors are involved.

THE CLASSICAL CONCEPT of rosacea or acne rosacea places it in the category of dermatosis of internal or unknown cause. Authors of current textbooks list the following as important etiologic factors.[5-7,9,10] vaso-motor neurosis, gastrointestinal, hepatic and pelvic disturbances, dietary indiscretions and focal infection.

As early as 1932 Ayres and Anderson[3] called attention to a type of rosacea which they felt was caused in large part by extraordinarily heavy infestation by the mite, *Demodex folliculorum,* and it was pointed out that the demodex type of rosacea was a further development or complication of an entity that had been described and named by the present author two years previously under the title "Pityriasis Folliculorum (Demodex)."[1] Since that time a number of publications have appeared on the subject as well as an exhibit at the thirteenth annual meeting of the American Academy of Dermatology and Syphilology in 1954.[2]

The most recent publication concerning the pathogenic role of Demodex in the production of pityriasis folliculorum (Demodex) and acne rosacea was Ayres and Ayres'[4] summary of 30 years' experience with these two commonly unrecognized entities. Both conditions were referred to as demodicidosis. Inasmuch as the authors' attempts to describe and segregate a particular type of acne rosacea as being caused wholly or in large part by Demodex has led to confusion and to the erroneous statement that the authors have claimed that all cases of rosacea are caused by Demodex, it was felt that a new term should be coined and that rosacea of the Demodex type should henceforth be referred to as "rosacea-like demodicidosis."

In order to clarify this entity it will be necessary to describe the appearance of pityriasis folliculorum (Demodex), rosacea-like demodicidosis and rosacea of internal origin, and also to review the pathogenicity of *Demodex folliculorum* and to describe the method of isolating and identifying this mite.

Demodex folliculorum has long been known as a normal inhabitant of the sebaceous ducts of the face in the adult human and is still regarded by many authorities as being without pathologic significance. It is true that it can occasionally be found in small numbers in material squeezed from sebaceous ducts of the nose and face and is not infrequently encountered in biopsy material removed from the face for unrelated conditions. At the crux of the situation is the fact that its pathogenicity is quantitative rather than qualitative. In small numbers the mite is harmless for it subsists on the sebum normally produced by the sebaceous glands and does not move about. It is only when the mites increase in enormous numbers, plugging the sebaceous openings, that pathologic changes occur.

Factors which appear to be important in producing this increase in the number of mites are the excessive use of cosmetics, especially creams and powders, and failure to cleanse the skin properly with soap and water. This combination leads to a plugging of the sebaceous orifices with fine follicular scales which give the skin a "frosted" or "nutmeg-grater" appearance and produces a feeling of dryness and slight redness with itching. This situation completes a vicious cycle, because often the patient, usually a woman, noting an increased dryness of the face, still further restricts the use of soap and water and applies more and more cream, which still further encourages the growth and multiplication of the mites.

Pityriasis folliculorum (Demodex), therefore, is characterized by an extremely mild and inconspicuous eruption of the face (Figure 1) usually in women, with slight itching, dryness, mild erythema and fine follicular scaling which can be detected only by close examination under magnification and illuminated cross-lighting. There is also usually a history of excessive use of cosmetics and little or no

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Presented before the Twentieth Annual Meeting of the Academy of Dermatology and Syphilology in Chicago, December 7, 1961, and (in Summary) before the Southern California Regional Meeting of the American College of Physicians in Coronado February 15-17, 1963.

Submitted January 23, 1963.

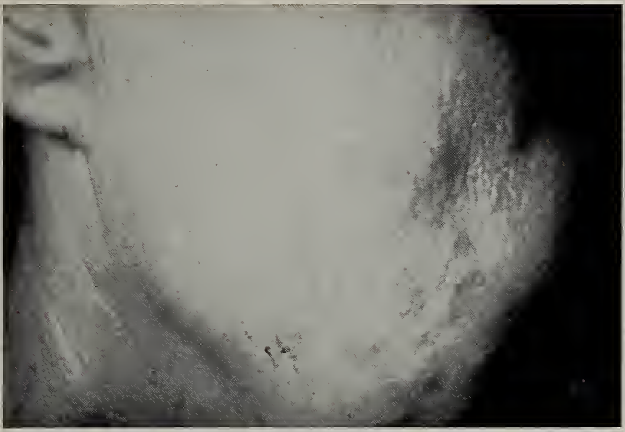

Figure 1.—Rosacea-like demodicidosis on face of a woman.

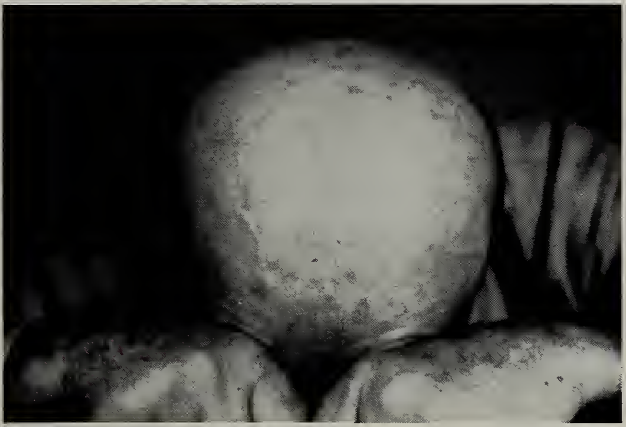

Figure 2.—Rosacea-like demodicidosis on bald scalp of a man.

soap and water. Since men usually use soap and water on the face when shaving, but sometimes neglect the forehead and bald scalp, this condition may occur in these locations in men (Figure 2).

Rosacea-like demodicidosis is usually a further development of the process described above, with the addition of superficial milky vesico-pustules, occasionally deeper lesions, and an increase in erythema. The fine follicular scaling is ordinarily present.

The principal differences between rosacea-like demodicidosis and acne rosacea of internal origin are the following: acne rosacea involves principally the front of the face, the flushing is more pronounced, the papulo-pustules are deeper and the skin is oily. Rosacea-like demodicidosis involves the sides as well as the front of the face, the skin is dry and follicular scales are usually present, erythema may be slightly less pronounced and the lesions consist of superficial vesico-pustules instead of deeper creamy papulo-pustules. Demodex is readily demonstrated in pus and in follicular scales, and the condition usually responds promptly to external medication. Rosacea-like demodicidosis is more common in women, acne rosacea in men.

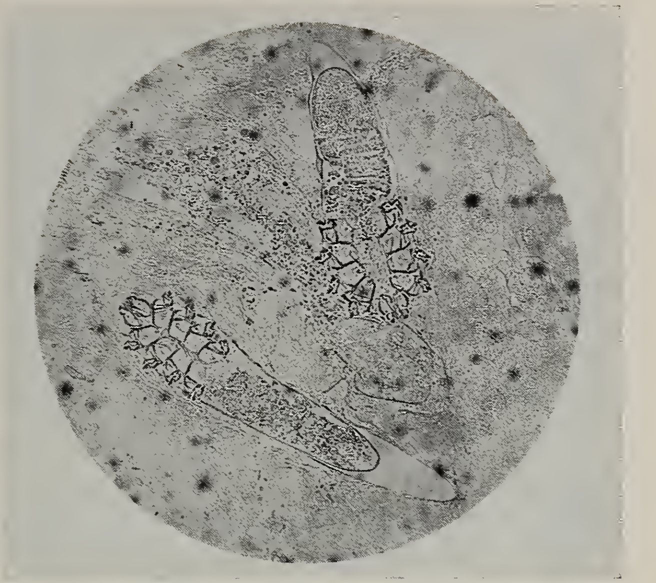

Figure 3.—High power magnification of Demodex folliculorum in drop of pus from rosacea-like demodicidosis.

Occasionally mixed types are encountered. In cases of so-called rosacea-like tuberculide of Lewandowski, exudate from the lesions should be examined for the presence of Demodex in abnormally large numbers.

Identification of Demodex is not difficult if certain important rules are observed. As was previously noted, the skin should be examined under strong cross-lighting with the aid of binocular magnifiers. Using a narrow pointed scalpel, a small droplet of pus is taken from a superficial vesico-pustule and placed on a glass slide; or, using pointed forceps, a few of the dry, follicular scales are picked out of the follicular orifices and placed on a slide. To this material is then added a drop of 40 per cent potassium hydroxide, and a cover slip is gently pressed down. The specimen is examined under the low power of the microscope without heating, since heat causes the organisms to disintegrate. Ten to 30 mites—sometimes more—may be seen in a single low-power field, frequently packed together like sardines. In addition to the lobster-shaped adults (Figure 3) with four pairs of short legs and elongated abdomen, it is not uncommon to encounter a few arrowhead shaped immature forms.

While these organisms may occasionally be found in material expressed from sebaceous ducts of the face or nose, even in normal skin, they are rarely found in comedones or pustules of acne vulgaris or of acne rosacea due to internal causes. It is the quantity of organisms found rather than their mere presence or absence which is of significance.

TREATMENT

Treatment is fairly simple once the diagnosis has been established. The patient is instructed to wash the face thoroughly every night with soap and water, then to rub in whatever ointment or cream is prescribed and wash it off in the morning. I have obtained best results from Danish Ointment,[8] a compound polysulfide ointment* formerly used in the treatment of scabies. In spite of its ingredients it seldom causes irritation if it is kept away from the eyelids and the neck. The ointment is applied for three consecutive nights, then is discontinued for four days and is resumed on alternate nights for one or two weeks, then once or twice a week for an additional several weeks. If irritation occurs, a steroid cream may be applied in the morning and the Danish Ointment applied less frequently.

If Danish Ointment cannot be tolerated, fairly good results can be obtained with a 0.5 per cent selenium sulfide (Selsun®) cream, applied sparingly at night and washed off in the morning. Gamma benzene hydrochloride (Kwell®) and Zylate® emulsion† have not proved as satisfactory in the treatment of Demodex infestation as in the treatment of scabies.

Clinical improvement is prompt following the daily cleansing with soap and water and the use of a compound sulfur ointment as described, with clearing of as much as 75 or 80 per cent in one or two weeks. Paralleling the clinical improvement, there is a gradual disappearance of Demodex from the skin, but it must be borne in mind that complete eradication of the mite is impossible and is not necessary. The clinical cure can usually be maintained by daily washing with soap and water.

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*Available from the Tilden Company, New Lebanon, N. Y.

†Benzyl benzoate, isopropyl alcohol and inert ingredients.

Quality of Medical Care

W. P. DEARING, *M.D.*, Washington, D. C.

• Quality of medical care may be considered under three headings: (1) how to describe or define it; (2) how to measure it; (3) how to achieve it.

The profession, the health administrator, the consumer, and others, in attempting to define quality of medical care are like the blind men describing an elephant, because of their different viewpoints. Quality is not an absolute but a goal.

Measurement is, therefore, piecemeal and judgmental, and various attributes of quality have been studied—clinical, records, economy, effect on health status. One must study to relate the phenomenon measured to the goal.

Methods of improving quality are implicit in the descriptions and in the attributes measured. Prepaid group practice is an effective and a growing method of bringing comprehensive health care with quality control to the American people.

IN OPENING a discussion of quality—that much sought after and much-to-be-desired attribute of medical care—I recall the old story of the six blind men who tried to describe an elephant. I do not mean to suggest that all of us who attempt to define or measure or improve the quality of medical care are blind. But all of us—practicing physicians and medical society executives; administrators of health services in hospitals, medical care plans, health departments; the insurance industry; management; labor and the general public—all of us could stand to have our vision, particularly our peripheral vision, improved. This would lead to better understanding of the elements that go to make up quality and thereby would help to achieve the high quality performance to which we all aspire.

Description of Quality

Each of us identifies the elephant in terms of his own experience and interests. The physician wants to practice good scientific medicine, to be busy, challenged, and respected, but not worked to death by overload of patients, harassed by administrators or regimented by government—any government! The health administrator wants his organization—hospital, health department, medical care plan—to provide useful service efficiently and economically, with good "public image," with competent, diligent medical and other staff, and with clientele who are well enough informed to use the services intelligently and to assume proper responsibility for their own health protection. Insurers want valid—not padded—claims for needed services, not unnecessary surgical procedures or days of hospitalization which keep them in hot water over spiraling rates. Management and labor, whose dollars in varying proportions are going systematically and increasingly to purchase medical care benefits on a prepaid basis, want the most scientific and the most comprehensive health care that modern knowledge can provide for the premiums paid. They want effective health maintenance and restorative services of assured "quality" for the hard dollars they commit. The consumer, John Q. Public, wants to be healthy. When health fails, he wants it restored with the efficiency and skill he has been taught that modern medicine can provide, and with dignity and respect of himself as a person and under economic arrangements that do not bankrupt or pauperize him or his family.

These wishes and expectations—all of them legitimate—exemplify the need for improving our peripheral vision regarding quality of medical care. Even the time-honored concept of physician-patient relationship is not simple. Certainly it is not within the exclusive control of the physician; it is influenced and modified by many other forces—economic, environmental and personal.

I should like, then, to consider the subject of quality of medical care under three headings: (1) Description, which I have already introduced; (2) How to measure it; (3) How to achieve it.

With further regard to description, I should like to quote Dr. C. B. Esselstyn, president of Group Health Association of America, in correspondence with the chairman of the American Medical Association's Committee on Medical Care for Industrial Workers. On August 3, 1960, Dr. Esselstyn wrote: "The best criterion for evaluating the quality of medical care I know of is the degree to which it is available, acceptable, comprehensive, documented and continuous and the extent to which adequate therapy is based on an accurate diagnosis and not symptomatology."

This definition encompasses most of the aspira-

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Submitted November 16, 1962.

tions I have attributed to those variously concerned with quality of care. Availability, acceptability, comprehensiveness, and continuity encompass the consumer's concern with getting a physician in an emergency, with financing, with fragmentation of his care among specialists and agencies, and with personal attention. Documentation by good medical records, and adequate therapy related to diagnosis and not merely symptomatology, are the essence of scientific medicine. The only consideration that might be added is that to realize its full potential, high quality medical care must be used intelligently by the consumer, who has a responsibility for his own health maintenance that cannot be sloughed to any physician or institution.

Measurement of Quality

From the complexities we have identified in attempting to define or describe quality, it follows that measurement will also be as complex. There have been many studies of quality of medical care. Rather than attempt an encyclopedic review, I shall identify some of the principles that have been developed and some of the indices that have been applied.

PRINCIPLES

Sheps[13] pointed out that a principle basic to the measurement of quality is that the reasons for seeking quality and for measuring it must be understood and acknowledged, because these reasons will affect the techniques and focus of measurement. Any health activity—by personal physician, hospital, health department, rehabilitation center—has as its broad objective the reduction of morbidity and mortality. There are, however, a list of subsidiary objectives which are assumed to be important steps toward meeting the broad objective, such as to provide better facilities, improve medical records, eliminate unnecessary hospitalization or medication, get people in earlier for diagnosis and treatment.

Another principle, also identified by Sheps, is that it is easier to measure achievement of such subsidiary objectives than to be sure that such achievement contributes to the broad objective. Evaluation of the quality of medical records or of patients' attitudes toward various doctors is much easier than measuring the contribution of these factors to quality of care. Baehr[2] cited a situation wherein physicians who have exceptionally good patient relationships and are very popular, are found, when their practices are studied, not to take off the diabetic patient's shoes and examine his feet, nor to use an ophthalmoscope on a hypertensive patient. Lee[8] said that in a certain group of physicians, one of the best men as far as competence and patients' satisfaction are concerned, keeps perfectly miserable records. After 20 years of being pounded at, he still does not keep good records, but he does excellent work.

PROFESSIONAL INDICES

Turning to indices and measurement, Peterson and co-workers[11] at the University of North Carolina made a two-year study of general practice in the state. They had excellent cooperation from the practicing profession and studied family background, education and training, office facilities, types of patients and diseases, and quality of practice.

With regard to quality, they started from the premise that the physician's first responsibility is to make a diagnosis. As major criteria for classifying each practice, they used the well-tried methods for reaching a diagnosis of (1) taking a history, (2) performing a physical examination, (3) performing the indicated laboratory work.

Although they attached greatest importance to the process of arriving at a diagnosis, because without a diagnosis therapy cannot be rational, they also studied therapy, efforts at preventive medicine, and patient record systems. Examples of indices used in evaluating physical examinations are (1) disrobing, (2) ophthalmoscopy, (3) percussion of the chest, (4) examination of the abdomen, (5) rectal examination. Examples of indices of quality of therapy are (1) use of "shotgun" antibiotics for upper respiratory infections, versus attempts to separate viral and bacterial infections; (2) treatment of anemia.

The investigators reported: "There was tremendous variation in the quality of medical care given in the practices visited. . . . At its very best the practice of medicine resembled that carried out in the medical school. . . . The physician obtained thorough histories and performed careful, competent physical examinations of each patient. . . . Other physicians' performances were antipodal. These physicians practiced from their desk chairs. Histories were almost nonexistent. . . . Patients were seldom undressed or laid down for examination. Abdominal examinations were performed with patients sitting in a chair. The lack of attention to the patient's safety was demonstrated by unsterile technique in performing venipunctures and hypodermic injections."

As to practice in a strictly urban setting, Makover[9] in 1948-49 studied the 26 physicians' groups and later Woodruff[14] studied the 30 groups which were then giving care to the more than half a million (now 630,000) individuals through the Health Insurance Plan of Greater New York (HIP). As indicators of quality, Makover studied selected clinical records and Woodruff studied clinical practice in addition to records.

Makover selected four categories of records, those having to do with cancer, with gastrointestinal disorders, with pediatric services and with health examinations. He analyzed about 25 case records in each category from each group studied.

On the basis of his findings, the 26 groups were classified into four levels of quality, ranging from the academic level of a teaching hospital service to a level so low that it was felt that the group should be either reorganized or disbanded. These findings documented the opinions of the Director and the Medical Control Board of HIP regarding the various groups. Far more than simply rediscovering what was already known, however, the study identified specific deficiencies in the various practices which could be and were corrected.

The Makover study proved so valuable that the Woodruff study on a broader base with more staff was initiated. Woodruff gave specific examples of improvement in the practice by individual physicians following completion of the study and detailed review of the findings with the physicians themselves: (1) Rechecks showed much improvement of clinical records of individual physicians within a few months; (2) Consultation and diagnostic services available in group practice were used more effectively; (3) More family physicians were working up their cases completely before seeking consultation; (4) Specialists were taking more seriously their responsibility to family physicians and contributing to their continuing education through reports and conferences.

Another illustrative study is that reported by Ciocco, Hunt and Altman.[4] Their report is one of a series from a study of group practice in the United States which I had the privilege of helping to initiate.

They examined the case records of a sample of 200 new patients in each of 16 groups. The information included chief complaint, number of visits, and the examination, tests, and treatments during a period of two weeks. They found substantial differences in these items among the groups. For example, in groups whose physicians had on the average the longest hospital training, patients received more general and rectal examinations, more x-ray services and more prescriptions for home treatment and diet. They received relatively fewer prescriptions for topical applications, cathartics and vitamins. In medical groups with higher proportions of certified specialists, patients were treated less frequently with sedatives and stimulants and hormones than were patients in other groups.

EFFICIENCY

An important aspect of quality is efficiency. From the standpoint of whoever is paying for it, this includes economy. The American Motors Corporation administers a six million dollar a year insurance program which includes hospital and surgical coverage for 3,000 employees. A representative[6] of the company expressed the company's concern over the rapidly increasing cost of providing health care insurance over the preceding five years. A joint company and union study found that:

"There were indications of reduced hospital utilization in employee groups enrolled in comprehensive prepayment plans

"High standards of medical care were being maintained in clinics and hospitals where the doctors were practicing group medicine

"There appeared to be excessive use of hospital and surgical services in programs requiring the hospitalization of insured employees for the collection of benefit dollars

"There is a growing interest in the field of labor-management relations in considering direct health and medical service to employees."

How to Achieve Quality

In considering achievement of quality, let me return to Esselstyn's definition that "medical care is of high quality to the degree that it is available, acceptable, comprehensive, documented and continuous and that adequate therapy is based on an accurate diagnosis and not symptomatology." It is clear that quality of care is not an absolute. We can never claim perfection in a field where human capability and judgment play so large a part.

Implicit in the specific aspects of quality that have been discussed in the examples cited are steps that can be taken to improve quality of medical care. Some of these are indirect. There are implications for medical education in both the Ciocco findings that methods of examination and treatment appear to vary with length of training of physicians, and the Peterson study of general practice in North Carolina. Peter Lee[7] discussed these implications in the Report of the Teaching Institute of the Association of American Medical Colleges on Medical Education and Medical Care.

It is implicit also that organization (or lack of it) for providing comprehensive medical care and the method of financing it materially affect its quality. Baehr[1] commented on the professional and social disabilities under which the family physician labors and the "episodic medicine" which results:

"One important element is the current practice of episodic medicine. Like the specialist, the family physician, as a rule, also waits for patients to seek his services for some episode of illness. Between episodes, he is often uncertain whether he is still the patients' family doctor or whether they are obtaining medical care elsewhere. As he expects a fee for each professional service, he often fears that anything but a passive waiting attitude might be interpreted as a solicitation. . . . Episodic medicine is fostered by the fee-for-service system of remuneration."

In March 1961, the National Advisory Health Council reported to the Surgeon General of the U. S. Public Health Service[10] that whereas morbidity, mortality and service utilization rates indicate that medical care in the United States has become increasingly effective, the services have grown more complex, more specialized, more fragmented and more impersonal.

Esselstyn[5] told the New Hampshire Medical Society: "The day has gone by when any single physician can hope to provide the best there is in all the fields of medicine to any one patient. The increasing complexity of medical care has given rise to the need for the integration of the specialization of medicine. Accordingly, the last twenty years has seen a rapid growth of group-practice teams that enable doctors with different training but common philosophies to pool their skills for the benefit of patients."

From industry, one of my colleagues reports that a top personnel executive in one of the large corporations in America came to him last spring with a draft of a "white paper" he was preparing for circulation topside in his organization. This paper reasoned that medical care benefits for employees was the only important area of substantial expenditure in which his company had absolutely nothing to say about specifications, productivity, etc. He argued that in the interests of productivity alone, not to mention other advantages, his company ought deliberately, in association with the union, to set forth on the path of developing group practice to provide comprehensive care as a condition of their prepayment program.

A voice from the consumer was the AFL-CIO, which at its convention in December 1961 adopted a resolution calling for prepayment group practice as a means of improving quality of service. Section 3 reads:

"The greatest promise for more reliable financial protection and for greater value for the medical care dollar is presented by those plans which combine comprehensive prepayment with direct-service arrangements based on the group practice of medicine. In this setting, the financial and organizational arrangements are such, and the benefits are sufficiently broad, that medical rather than economic considerations can determine what services are to be rendered."

These are a few samples of the many voices that are being raised from all quarters of our society, calling for higher quality comprehensive medical care through prepaid group practice. It is interesting, as Baehr[3] noted in his Milbank Memorial lecture last fall, that the early resistance within the medical profession of this country to group practice *per se* and to prepayment for medical care has now largely vanished. Opposition is now directed to the combination of group practice with prepayment capable of providing insured families with completely prepaid comprehensive medical care. Such prepaid group practice can compete advantageously with solo practitioners and specialists who charge a fee for each service. This is surely one of the reasons why this is sometimes given the derogatory term, "panel practice," which is considered by most of the profession to be evil.

Yet, in spite of difficulties, lack of understanding among the profession and the public, and active, sometimes unscrupulous, opposition, prepaid group practice is expanding. You have an outstanding example in the Kaiser Foundation Health Plan right here in California. Their enrollment grew from 632,000 on January 1, 1960, to 791,000 at the first of 1962. To care for this increase the contracting medical groups increased their staff from 604 to 744 physicians in the two years.

Another example is the Community Health Association of Detroit, which enrolled over 25,000 individuals when the rolls were opened for new members after a year of operation. This was a four-fold increase for this relatively new plan. Group Health Association of America has more requests for technical advice and assistance on "how to do it" from professional, consumer and educational groups over the country than it can fill.

CONCLUSION

Prepaid group practice offers unique advantages for the physician, for the consumer, and for society, as an efficient means of providing comprehensive medical care with quality control.

1. For the profession, it offers a team of colleagues with pooled skill and equipment, rotation for weekends, vacations and study. The physician—even the young one just starting practice—is surrounded by a group of well-trained individuals, all of whom want to see each other succeed.

2. For the consumer, it offers an available physician for medical emergencies—one who has been selected by his colleagues for his skill, responsibility and compatibility, and who is subject to their pro-

fessional discipline and enjoys their professional support. More than this, it offers him comprehensive service from an organization whose economic as well as professional interest is in keeping him well rather than merely caring for him when he is ill—and all this on a prepaid basis within his means.

3. For society, it offers an orderly means of combatting fragmentation of services for the patient and of eliminating the expensive distortions and duplications that are fostered by our unorganized specialization and partial coverage insurance programs. It provides a means, acceptable to both producer and consumer of health services, for controlling and meeting the mounting costs of medical care.

Willard Rappleye[12] said: "Health is vital because the capacity of the human to achieve is ultimately the most crucial social resource. . . . The obligation of health services is to maintain that capacity." Prepaid group practice can help to discharge this obligation by making the miracles of modern medicine available to our society.

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CASE REPORTS

Rapid Healing of Peptic Ulcer Despite Administration of Corticosteroids

Report of Three Cases

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THAT ONE of the undesirable side effects of steroid medication is an increased tendency to peptic ulceration seems fairly well established.[2] Review of the literature, however, suggests that the incidence is related to dosage. Thus, Kern and coworkers[3] found an inordinate occurrence of peptic ulcer in patients with rheumatoid arthritis treated with 50 mg. of cortisone or 20 mg. of prednisolone daily. When dosage was at levels corresponding to 10 mg. of prednisolone, no rise was noted. Among 180 patients under treatment with steroids for ulcerative colitis Kirsner[4] found two who had peptic ulcers. Dubois[1] in an investigation of the effect of steroid therapy in patients with disseminated lupus erythematosus found that whereas peptic ulcer occurred in as high as 47 per cent of patients given 60 mg. of cortisone daily as compared with 5 per cent of those treated with salicylates, the incidence was zero in patients receiving 10 mg. of prednisolone or less. Nevertheless, active peptic ulcer is given as an absolute contraindication to administration of steroids by most authorities and even in brochures of pharmaceutical companies marketing these drugs.

However, recent experience with three patients, two with rheumatoid arthritis and one with bronchial asthma, in whom study revealed co-existing gastric ulcer, suggests that the benefits of steroid medication may not have to be withheld. The healing of the ulcers in patients following an "ulcer regimen" while receiving hormonal therapy was so rapid that this report seems warranted.

REPORTS OF CASES

CASE 1. A 35-year-old woman was first seen August 17, 1961, with complaint of severe pain and stiffness of the hands and recurrent painful swelling of the knees, ankles and metacarpal joints. During the previous four years she had been under treatment and observation at a large medical center for rheumatoid arthritis. During that period she had received salicylates, physical therapy and occupational therapy without significant benefit and her disability had increased to the point where she was unable to hold objects in her hands, which seriously impaired her ability to do her housework. In the preceding three months she had also noted indigestion and heartburn and increasing loss of appetite. These symptoms were accompanied by a progressive weight loss of 15 pounds.

Aside from diffuse epigastric tenderness, abnormal findings on physical examination were restricted to the upper extremities. There was pronounced restriction of flexion of the fingers of both hands. On passive flexion, tenderness and crepitation were elicited along the flexor tendons, particularly of the second to the fifth phalanges. The arterial pulsations were normal and, except for some loss of normal skin folds, there was no evidence of Raynaud's disease. An upper gastrointestinal roentgen examination showed a large ulcer in the pyloric channel. The patient was put in hospital and placed on a strict "ulcer regimen," including anticholinergic drugs and hourly administration of alkali. At the same time she was given 10 mg. of prednisolone three times daily. In 48 hours, pain and tenderness had almost completely disappeared and the dose was reduced to 5 mg. three times daily. Subsequently, hydrocortisone was injected into several of the most severely involved tendon sheaths. An upper gastrointestinal x-ray examination on August 31 showed almost complete healing of the pyloric channel ulcer, leaving only a slight residual puckering. On this date the patient was discharged with provision for periodic observation. At last report, while taking 7.5 mg. of prednisolone daily, she was able to do all her housework and, except for some stiffness of the fingers in the morning, was free of all manifestations of arthritis or tenosynovitis. A roentgenographic gastrointestinal examination in January 1962 was negative for ulceration.

CASE 2. A 40-year-old white man of Mexican extraction was seen on October 30, 1961, because of severe dyspnea. He said he had had repeated attacks of asthma since childhood. He had also had recurring episodes of epigastric pain, but a gastrointestinal series in October of 1960 had shown only duodenal irritability. A gastrointestinal series on October 31, 1961 showed pronounced deformity of the distal third of the stomach with loss of peristalsis suggestive of either extensive ulcer scarring

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Submitted September 19, 1962.

or, possibly, malignant disease. The patient refused to enter a hospital despite all efforts to convince him of the seriousness of his condition. Finally he agreed to remain at bedrest at home and to follow a strict ulcer regimen, taking milk and alkali hourly. Prednisolone was prescribed, 10 mg. three times daily for two days. By the end of that time respiratory symptoms had cleared and dosage was reduced to 2.5 mg. three times daily. The patient was seen at regular intervals and appeared to make excellent progress. On x-ray examination of the upper gastrointestinal tract on November 21, no evidence was seen of the previously observed deformity of the prepyloric region. There was no evidence whatsoever of scarring, and peristalsis was entirely normal. When last seen on December 16, 1961, the patient was completely asymptomatic while taking 5 mg. of prednisolone daily in two divided doses.

CASE 3. A 48-year-old white woman was first seen November 27, 1961 with complaint of severe midabdominal and epigastric pain of six hours' duration. She said that over the preceding three months she had had repeated attacks of abdominal pain, from which she had obtained some relief by taking sodium bicarbonate and Alkaseltzer®; but the pain had become increasingly severe in the preceding week. The past history included cholecystectomy, appendectomy and cesarean section. For several years she had been treated for arthritis.

The patient was obese. Two well healed longitudinal incisions were noted on abdominal examination, but no masses or organs were felt. There was diffuse, exquisite tenderness in the entire epigastrium with reflex rigidity, but no definite mass could be delineated.

Leukocytes numbered 15,000 per cu. mm. with 79 per cent polymorphonuclear cells. The serum amylase was 330 somogyii units. An upper gastrointestinal series showed a gastric ulcer measuring 1 cm. in diameter in the prepyloric region with a surrounding large area of edema. Roentgen examination of the spine showed diffuse generalized osteoarthritis.

The patient was placed on a strict ulcer regimen but continued to complain of recurrent attacks of severe pain in the abdomen and the back. Because of the back pain, prednisolone in doses of 10 mg. three times daily was given for two days, and then 5 mg. three times a day.

The patient made very slow improvement. In the belief that the severe back pain and the evidence of pancreatic disease might be caused by posterior perforation into the pancreas, surgical exploration was carried out January 9, 1962. Extensive adhesion of the pancreas to the posterior wall of the stomach was observed. A 50 per cent gastric resection and vagotomy were done. On pathological examination of the specimen of resected stomach, considerable submucosal edema and chronic inflammation were noted, but there was no gross evidence of residual ulcer.

DISCUSSION

It is well established that one of the physiologic effects of adrenal corticosteroids is to increase acid and pepsin secretion by the gastric mucosa. It is, therefore, entirely logical to reason that steroid therapy should aggravate peptic ulceration. This is the rationale for considering these drugs contraindicated in persons with ulcers. Consideration must be given, however, to the fact that patients suffering from asthma and rheumatoid arthritis are under severe stress and, probably, elaborate increased amounts of endogenous corticosteroids. In fact, some studies indicate that the incidence of peptic ulcer is increased in such circumstances. Gray[2] and coworkers postulated a hormonal pathway through the pituitary adrenal axis which is activated by any emotional or physical stress. In appears reasonable to speculate that relief of pain and dyspnea results in a reduction of total circulating corticosteroids. This might well be a subject for further investigation. Certainly, the ulcers in the patients here reported upon healed more rapidly than would have been anticipated.

SUMMARY

Three patients had large gastric ulcers that healed while they were receiving steroid therapy for concurrent disease—bronchial asthma in one and arthritis in the other two. With the patient following a strict "ulcer regimen," healing took 13 days, 20 days and 42 days, which suggests that steroid therapy need not be denied to patients because of coexisting peptic ulcer.

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Ocular Complications Induced by Chloroquine Therapy

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OCULAR COMPLICATIONS resulting from the systemic use of the antimalarial compound chloroquine have been reported frequently. Because of the present widespread use of this drug in the nonspecific treatment of rheumatoid arthritis and lupus erythematosus it is important that the prescribing physician be aware of and alert to development of these complications. Two major types of ocular changes have been noted, those involving the cornea and those involving the retina.

The corneal complications have been described by Hobbs[6,8] and Calkins[1] and are similar to changes described in patients taking another antimalarial drug, quinacrine (Atabrine®).[3,9,11] Among subjective ocular complaints reported have been colored halos and rings around lights, pronounced photophobia, haziness of vision, a film over the eyes and difficulty in night driving. These symptoms may simulate those occurring in mild transient attacks of narrow angle glaucoma. In most of the patients the corrected visual acuity, as tested in the standard way with the Snellen chart used indoors, is normal; but some patients who have had symptoms for a long time do have reduced visual acuity. In one case, in which the test was made in daylight as opposed to the usual indoor testing, a decrease in visual acuity was noted.[1]

The corneal changes are best seen with a biomicroscopic slit lamp. Early changes in the cornea appear as a fine corneal edema centrally located and are best seen by retroillumination. Later changes are described as fine granular or dust-like opacities in the corneal epithelium. These individual opacities are extremely minute but may be very numerous. They develop most often in the central area of the cornea, and as the condition progresses the opacities take on a characteristic curved or sinuous grayish-white line extending horizontally just below the inferior pupillary margin. Whorl or spoke-like arrangements simulating magnetic lines of force extend from this line toward the limbus. The involved epithelium does not stain with fluorescein and remains smooth. If progression continues the described changes may be seen grossly. These corneal changes are responsible for the previously described subjective visual symptoms.

The dosage of chloroquine and the duration of the time necessary to produce the corneal changes apparently is quite variable. Patients receiving higher dosages seem to develop symptoms earlier. Some patients receiving 250 mg three to four times a day have been observed to develop signs in four to six weeks,[1] those on smaller dosages after a much longer period of time. Corneal changes have been progressive in instances where the drug was not withdrawn or reduced. Clearing of the cornea and subsidence of symptoms and corneal changes takes one to four months, sometimes more, after discontinuing the drug. We could find no reports of cases in which the corneal changes were permanent.

More serious and permanent visual loss secondary to retinal changes has been reported by various investigators[4,5,6,7,10] to have occurred in patients receiving chloroquine and apparently due to the drug. These retinal changes involve the macula area and the peripheral retina, as well as the retinal arteries. The first report in the American literature was alluded to in 1957[2] and definitive correlation of visual loss with use of chloroquine was made in the British literature in 1959.[5,7] Pigmentary degeneration of the macula and peripheral retina takes place and the arterioles appear narrowed. Visual field loss, paracentral scotomas and a decrease in visual acuity have been noted. In all cases the loss of vision was permanent. The retinal changes do not seem to progress after the withdrawal of the drug but instead remain static. In some cases the visual fields continue to deteriorate even after withdrawal of the drug.

Physicians using chloroquine and related compounds should be aware of the ocular complications and the serious nature of some of them. Patients receiving the drug should be questioned regarding visual symptoms. Visual symptoms should suggest prompt referral for ophthalmological consultation and if they are related to use of chloroquine, the dose should be reduced or discontinued.

REPORTS OF CASES

CASE 1. A white woman 50 years of age was diagnosed as having rheumatoid arthritis by clinical symptoms and radiological changes in August, 1961. The diagnosis was supported by an accelerated blood sedimentation rate and the result of an F-2 test. The patient had been previously treated for three years with corticoids for the same diagnosis. Administration of chloroquine, 250 mg twice daily, was begun November 28, 1961. Much subjective improvement was noted within two weeks. On February 20, 1962, the patient complained of some blurring of vision and minor changes in visual acuity but ophthalmologic evaluation was not done. The dose of chloroquine was reduced to 250 mg daily. On July 10, 1962, the patient entered the eye clinic with the

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further complaint of seeing halos and rainbows around lights for the last three months. The best corrected vision was 20/25 in each eye. Intraocular tensions were normal and the angle was open (2+). There was a typical moderately advanced pattern of chloroquine keratopathy in both corneas with a horizontal, curved grayish-white line extending just below the inferior pupillary margin. A whorl-like pattern resembling magnetic lines of force extended from this line. The fundi were normal. Chloroquine was immediately discontinued and the patient was examined at ten-day intervals. On July 20, 1962, no objective change was noted but the patient said the blurring was much less. On examination with a slit lamp August 3, 1962, the horizontal line on the cornea was less definite. Mild cloudiness remained in the central cornea but the radiating lines which formerly had extended from the horizontal corneal line had almost entirely disappeared. The last examination on September 4, 1962, showed further resolution of the horizontal line and disappearance of the corneal cloudiness. The patient said she no longer had blurring or haziness and did not see halos. Visual acuity was 20/20.

CASE 2. A 33-year-old white woman was diagnosed as having rheumatoid arthritis November 19, 1958, on the basis of clinical symptoms, roentgenographic changes, accelerated sedimentation rate and results of an F-2 test. Administration of chloroquine, 125 mg three times a week was begun on January 14, 1960. The dose was increased to 250 mg three times a week on January 28, 1960, and to 250 mg daily on March 10, 1960. Decided clinical improvement was noted. On March 30, 1961, the patient complained of poor vision especially of considerable cloudiness in the right eye. On May 17, 1962, she reported increasingly poor visual acuity but examination in the eye clinic at that time showed 20/20 vision. The tensions were within normal limits. A distinct corneal haze was seen in both eyes. On slit-lamp examination, a typical moderately advanced pattern of chloroquine keratopathy was noted, with the horizontal line on the cornea and the radiating lines extending toward the limbus. The right eye was more heavily involved than the left. Chloroquine was immediately discontinued. On June 19, 1962, the corneal haze was noted to be decreased, although the patient still complained of visual blurring. The radiating lines had considerably diminished but the horizontal line was still quite prominent. On August 14, 1962, slit-lamp examination showed that the left eye had cleared almost completely. In the right eye there was still evidence of the horizontal line, but the corneal cloudiness had disappeared and the patient said that her vision was much better. No pathologic changes in the fundi were noted with the exception of a few micro-aneurysms.

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Intracerebral Hemorrhage as a Complication Of Carotid Artery Operations

A Report of Two Cases

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SINCE THE FIRST REPORT of successful operation for carotid artery insufficiency by Eastcott, Pickering and Rob[4] in 1954, rapid progress has been made in developments of surgical techniques. Knowledge of the symptoms of carotid stenosis has made possible the early diagnosis and surgical treatment of the disease. The results have generally been very good, and reports of complications few. However, as the number of operations increases, dangers are expected to be recognized. Many observers have expressed the opinion that in cases of complete occlusion of more than a few hours' duration, surgical treatment generally does not benefit the patient, but the possibility of increasing the disability has not been stressed. Gurdjian and coworkers[8] recognized the possibility of making an infarct more severe, although that did not occur in their cases. It did happen, however, in two patients in our care.

Submitted October 24, 1962.

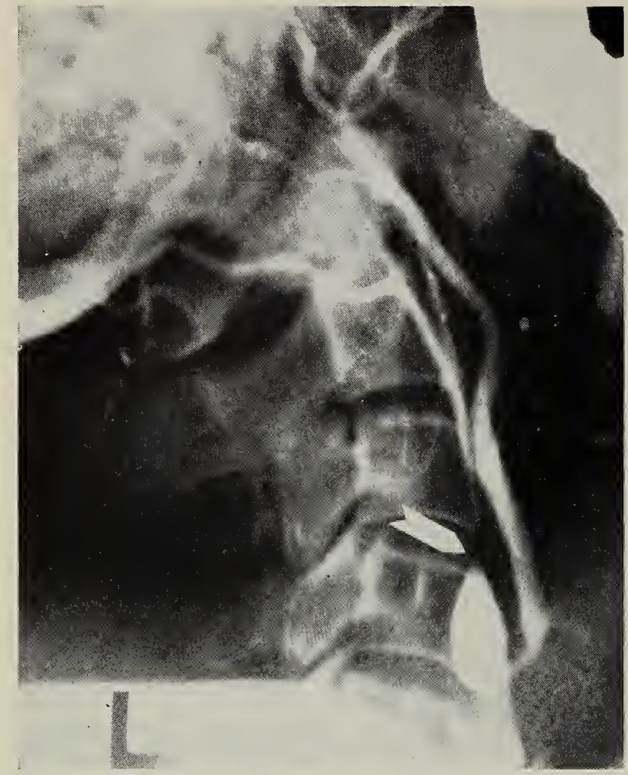

Figure 1.—(Case 1)—Lateral arteriogram showing occlusion of the left internal carotid artery (arrow).

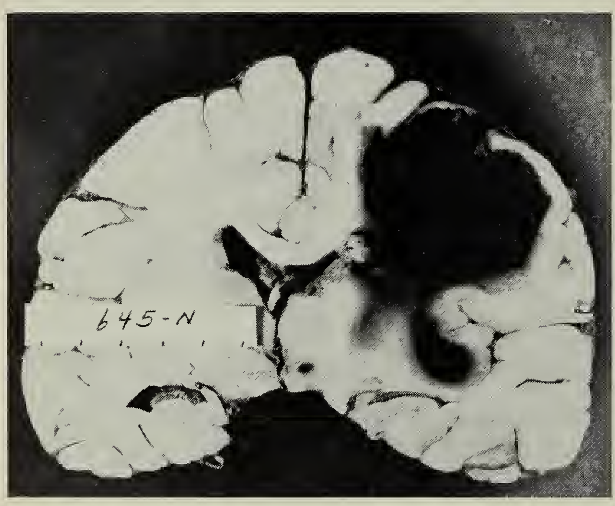

Figure 2.—(Case 1)—Section of the brain, showing massive intracerebral hemorrhage into left side.

REPORTS OF CASES

Case 1. The patient, a 51-year-old man, was well until November 20, 1960, when he noted difficulty using his right hand. The impairment gradually progressed over the next 24 hours. Weakness of the right side of the face and motor aphasia developed.

On physical examination, the blood pressure was 180/120 mm of mercury. Right hemiparesis was noted, more pronounced in the upper extremity. There was a bruit over both sides of the neck. On the right side it was loudest in the supraclavicular fossa, and on the left at the carotid bifurcation, where there was decided tenderness. Right lower facial weakness and considerably diminished strength and tone in the right arm were observed, but only slight weakness in the right leg. Increased deep reflexes and extensor plantar responses were obtained on the right.

Sensory appreciation appeared normal. The patient obeyed spoken commands, but could speak only monosyllables. The ophthalmodynamometric pressures on the right were greater than 150/70 gm, on the left 110/50 gm.

Bilateral carotid arteriograms (Figure 1) showed no shift of the right anterior cerebral artery but there was stenosis of the common carotid artery on the left, with a complete obstruction of the internal carotid just above the bifurcation.

At operation under local anesthesia, 60 hours after the first appearance of symptoms, a large plaque was found at the left carotid bifurcation and a thrombus occluded the internal carotid artery. Retrograde bleeding followed aspiration of the thrombus. Endarterectomy was performed at the bifurcation. The blood pressure was maintained at a level of 200/100 mm of mercury, except for one short period when the systolic pressure was 140 mm.

In the ensuing 24 hours the patient's condition seemed satisfactory, although profound right hemiplegia and sensory and motor aphasia were present. A moderate amount of fluid drained from the wound. The patient was restless but gradually quieted. Intermittent positive pressure breathing was administered because of wheezing and difficulty in clearing the respiratory passages. On the second postoperative day the blood pressure began to rise, breathing slowed, the patient quickly became stuporous, then unconscious, and decerebrate rigidity developed. The left pupil was dilated, the retinal veins were engorged and there were small hemorrhages on the left disk. The spinal fluid pressure was above normal range and material withdrawn was tinged with blood. The patient died November 25, 1960.

At autopsy, severe coronary sclerosis was noted. Sections of the brain (Figure 2) showed massive collection of extravascular blood in the left anterior basal ganglion extending into the left frontal lobe to the subarachnoid space. The source of the hemorrhage could not be determined. The internal carotid was blocked by thrombi to the level of the siphon.

Case 2. A 52-year-old man was examined December 22, 1961, because of episodes of visual obscuration in the right eye, lasting for 10 to 20 minutes, over a two-year period. Only the central vision was affected and usually the condition was relieved by ingestion of sucrose. The patient also had intermittent pain about the right eye and the suboccipital region. There had been no symptoms of cerebral abnormality. In 1955, exudates had been noted in the retina and studies at that time had led to diagnosis of diabetes mellitus for which the patient was treated.

On examination, the temporal vessels on the right were observed to be tortuous and thickened. The retinal arteries on the right side were small, tortuous and irregular. No abnormalities were noted in the left eye. Microaneurysms were prominent in the right eye, particularly in the peripheral part. Ophthalmodynamometric pressures were equal in both eyes. On compression of the right eye, blindness developed in the left. Patchy scotomata were present in both eyes, but visual acuity was 20/30.

There was a soft bruit over the right carotid bifurcation and over both supraclavicular fossae. Blood pressure was 140/70 mm of mercury in the right arm; 135/70 in the left. There was a murmur over the abdominal aorta, transmitted into the femoral arteries. Compression of the carotid artery on the right side for 10 seconds brought about visual impairment in the right eye.

A right carotid arteriogram (Figure 3) on December 29, 1961, showed pronounced stenosis of the internal carotid artery at the bifurcation. An electrocardiogram was interpreted as consistent with an incomplete right bundle-branch block. Right carotid endarterectomy was done January 16, 1962, under local anesthesia. Using a plastic internal shunt, a large arteriosclerotic plaque was removed from the proximal internal carotid artery and the vessel was closed with a Dacron® roof patch. Decided improvement in the pulse was noted after the operation. Especially striking was the dilatation of the artery. During the operation the patient remained in a normal mental condition and had no motor or visual disturbances. The systolic blood pressure during operation on one occasion dropped to 120 mm of mercury, but otherwise remained at 160 mm.

The postoperative course was entirely benign. The patient was ambulant on the second postoperative day but began to complain of headache and pain in the left arm. Numbness of the arm, thickness of his speech and vomiting ensued. The blood pressure was 230/100 mm of mercury. The patient became comatose and respirations were stertorous. Upon examination, decerebrate rigidity was noted. The pupils were dilated and fixed. Babinski's sign was present on both sides. The spinal fluid pressure was elevated and an aspirated specimen was grossly bloody. Urea was administered intravenously and hypothermia was induced. The patient's condition did not improve and he died four days after the operation.

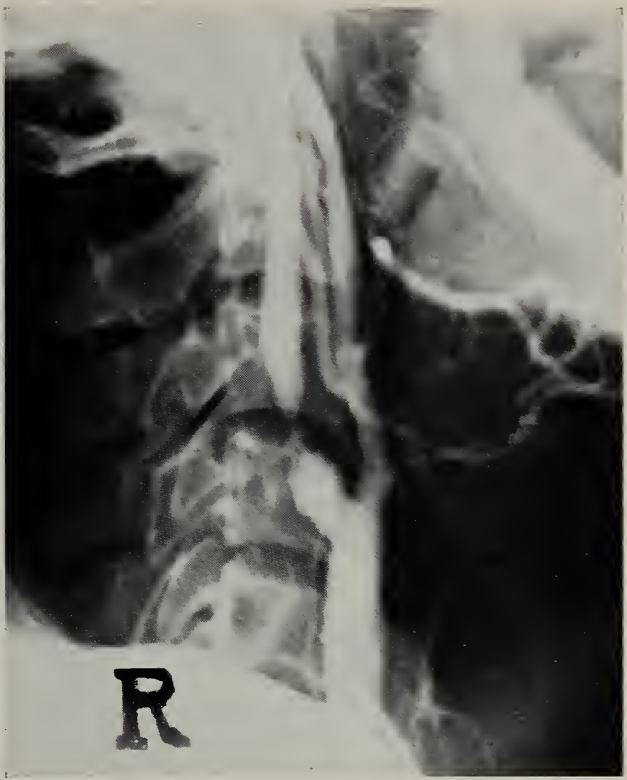

Figure 3.—(Case 2)—Arteriogram made before operation showing severe stenosis of the internal carotid artery.

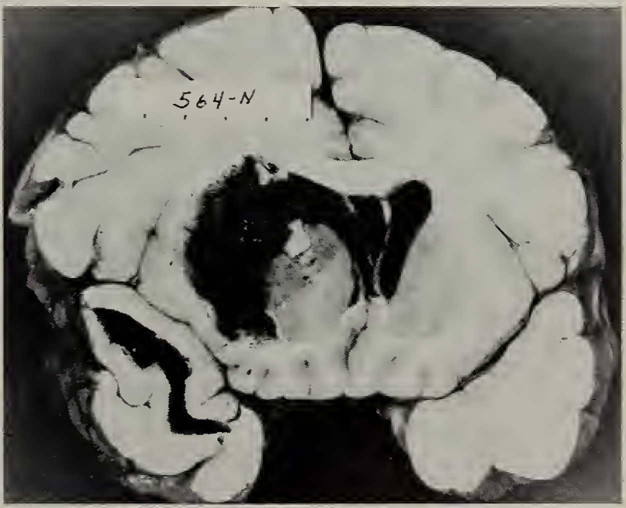

Figure 4.—(Case 2)—Section of the brain showing large area of hemorrhage into right side.

At autopsy the carotid arterial systems were patent. The left carotid orifice was reduced by a plaque at the aorta. Plaques were also found in the aorta and in the coronary and iliac arteries. Moderate narrowing of the renal arteries was noted.

Sections of the brain (Figure 4) showed extravascular blood in the right anterior basal ganglion region extending into the ventricular system. The source could not be determined. Also noted were tentorial notches of the uncus and midbrain hemorrhages.

DISCUSSION

In general the complications of carotid operations that have been reported in the literature are those that might be expected when the course of the disease is not altered. Other causes of postoperative difficulty have been thrombosis at the endarterectomy site and occlusion of the opposite carotid artery. Later death from coronary occlusion has been reported as a common sequel. DeBakey and coworkers[3] reported a case in which wound infection, disruption of the arterial suture line and fatal hemorrhage occurred. Crawford and coworkers[2] reported mental obtundity and elevated cerebrospinal pressure as a result of venous compression by mediastinal edema in three patients operated on for stenosis of the vessels in the chest.

Among the reported cases of cerebral hemorrhage after endarterectomy was one in which the patient, returning for angiograms six weeks after endarterectomy, became frightened and the systolic blood pressure rose to 190 mm of mercury.[10,14] It was later discovered that an intracerebral hemorrhage had occurred in the hemisphere opposite the endarterectomy. The patient had been receiving anticoagulant therapy. In one of the cases reported by Bahnson and coworkers[1] the patient returned three months after operation with signs of hemorrhage in the hemisphere opposite the endarterectomy. Riishede and coworkers[15] reported the case of a 68-year-old man who was operated on ten hours after a stroke. Subtotal occlusion of the left internal carotid artery was corrected but the patient got worse, and died 36 hours later. At autopsy a hemorrhagic infarction was observed. Death was attributed to a fall in systolic blood pressure from 180 to 90 mm of mercury for a 15-minute period during the operation. Lemmen, Davis and Radnor[12] described a 60-year-old man in whom hemiplegia developed during examination. Arteriography showed an occlusion of the left internal carotid artery and thromboendarterectomy was successfully performed four hours after the stroke. The patient then was treated with anticoagulants. He died ten days after the operation and the prothrombin time at the time was decidedly lengthened. A hemorrhagic infarct was found in the left basal ganglion, as well as hemorrhages in other body organs. Death was attributed to the anticoagulants.

The mechanism of intracerebral hemorrhage is still debated. One group feels that preexisting cerebral changes cripple the support of the vessel and thus lead to rupture. Another group believes that vascular ruptures can occur without preceding parenchymatous degeneration. They agree, however, that two factors are necessary to produce hemorrhage—first, a sufficient volume of blood must flow through the vessel distal to the area of occlusion, and, second, altered permeability of the vessels to allow escape of blood.

Rouchaux in 1884[16] originated the theory of prehemorrhagic brain softening which has been subsequently elaborated by others. Westphal[19] believed that the hemorrhage was preceded by angiospasm, leading to anemic softening, and that when there was a return of normal blood flow, rupture of the vessel occurred because of defective support by the surrounding brain tissue. Schwartz[17] favored this view and expressed belief that an injurious stimulus in one of the large vessels resulted in generalized spasm and stasis throughout the area of distribution of the vessel; this in turn causing multiple nutritional deficiencies, and finally petechial hemorrhages coalesced to form a massive clot. He expressed the opinion that the hemorrhage was always preceded by cerebral softening. Globus and coworkers[7] occluded the middle cerebral artery in dogs, then elevated the blood pressure by injections of phenylephrine hydrochloride. Hemorrhagic infarction was demonstrated in a significant number of animals. Globus said that he had examined the brains of patients who died of cerebral hemorrhage into areas of preexisting infarction. Fazio[5] disagreed with the postulation that red infarcts and pale infarcts are different stages of the same process. He believed that the two were different and that red softening was due to vasodilatation, stasis and diapedesis.

Harvey and Rasmussen[9] were able to produce intracerebral hemorrhage in dogs by 50 minutes of temporary occlusion of the middle cerebral artery. They observed severe vasospasm from manipulation and felt that intravascular lesions might thus produce ischemia of the entire cerebral hemisphere. Hain, Westhayser and Swank[9] produced similar lesions after two hours of temporary ligation of the middle cerebral artery in dogs. Their histological studies led them to believe that the blood escaped by diapedesis and was nearly complete before necrosis of the vessel wall occurred. They concluded that permanent occlusion of the vessel was not necessary to produce these changes.

Through a window in the skull, Meyer[12] observed the cortical vessels of monkeys after ligation of the middle cerebral artery. He obtained no hemiplegias until the systolic blood pressure was below 70 mm of mercury. He observed stasis beginning in the venules. After four to eight hours, hyperemia appeared as collateral circulation was established. Diapedesis and perivascular hemorrhages occurred at this stage. Intermittent restoration of flow resulted in progressive diapedesis and hemorrhage, producing hemorrhagic infarction consequent upon anoxic damage to the vessel walls. When an animal with an infarction received anticoagulant drugs, the degree of hemorrhagic infarction was greater, although transient failure of circulation was more difficult to produce.

In the two cases presented here, the possibility that the intracerebral hemorrhages were independent of the carotid operation must be considered. However, in Case 1 it appears likely that vascular damage had occurred as a result of ischemia, and that return of normal blood flow to the cerebrum resulted in rupture of an injured vessel. In the second case there was no clinical evidence of cerebral ischemia; however, the pronounced dilatation of the internal artery after endarterectomy indicates that a decided increase of cerebral blood flow must have occurred. Vascular damage caused by diabetes was possibly a further factor. We do not believe that hypertension itself was responsible in these cases, for signs of cerebral damage appeared before the blood pressure increased.

SUMMARY

Two cases of intracerebral hematoma following operation on the carotid arteries have been presented. One patient had stenosis without symptoms of cerebral damage before operation. The other had complete occlusion of an artery. A review of the experimental evidence suggests that episodes of ischemia may adversely affect the cerebral vessels leading to rupture and hemorrhage when circulation has been reestablished.

365 East 21st Street, San Bernardino (Estridge).

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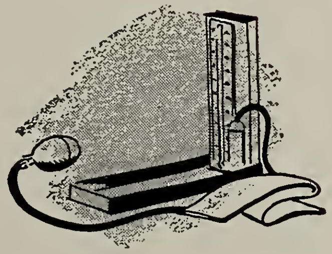

California
MEDICINE

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EDITORIAL

Medicine in Society

We live at a moment in history when medicine is more effective in helping people than ever before and yet it is quite obvious that it has somehow failed to satisfy the society it serves. It is most appropriate that this subject be studied, and the Council and the recent House of Delegates are to be commended for requesting that the California Medical Education and Research Foundation assess the role and responsibilities of modern medicine in modern society. This will not be an easy task, but if accomplished in a thorough and scholarly fashion, the findings and recommendations should be of great importance and perhaps of far-reaching consequence.

From the most ancient times medicine in some form has been an integral component of every society and in each instance it has both affected and been affected by the ideas, beliefs and culture of that society. Modern medicine is certainly no exception. Its impact upon society is obvious enough and it is also quite evident that social forces are having an important influence on medicine. The very central role which modern medicine plays in modern society requires that these forces be examined and that the nature of their interactions be better understood.

It is generally conceded that the beloved "horse and buggy doctor" of a half century ago did satisfy the society he served. Great emphasis has been placed upon his understanding of the "art" of medicine. Perhaps what is really meant by this is that he understood how to apply the medical knowledge of his times to meet the needs of the patient, the patient's family, the community and the many facets of his culture which interacted with medicine in his time.

But during the last fifty years both medicine and society have profoundly changed. Medicine has become deeply absorbed in advancing its science and applying its new discoveries in medical practice, and so has tended to neglect its social responsibilities. Society, for its part, has become deeply and emotionally committed to the support of scientific research and now is insisting on a more or less direct pay-off in terms of the right of all its citizens to a better living and to a longer and healthier life. These and other effects of scientific and technologic progress upon medicine and society are not to be reversed and cannot be ignored. They are destined to continue and to produce a true cultural revolution which has indeed already started.

It is time therefore that someone reassess the historic functions of the "science" and "art" of medicine in terms of modern medicine in modern society. The interrelationships to be considered are becoming more complicated almost daily. Many people, many interests and many specialized functions are involved. The ramifications of medicine extend widely and deeply into almost very aspect of society. A most complex system with many interdependencies is developing which like any complex system, be it mechanical, biological or social, must have some order and direction to run smoothly. At the moment, there is a real vacuum in leadership for these matters, and this vacuum surely will be filled.

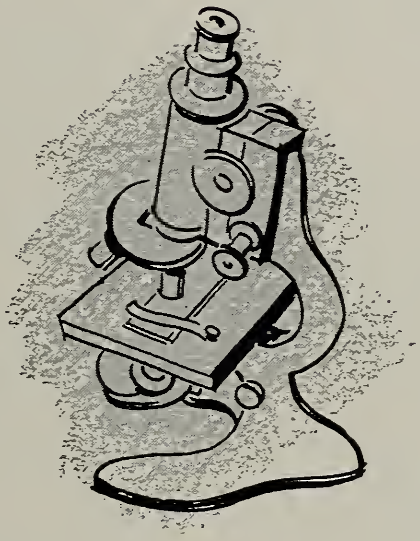
These developing interdependencies raise some important questions for both medicine and society. Whose primary responsibility is it to determine the function of the "science" and "art" of medicine in society? Is it medicine's, is it society's, or is it the responsibility of both? Will the science and art of medicine become separated, with the doctor limited to the role of scientific technician and some other profession made responsible for the other historic functions of medicine in society? There is evidence to suggest that this is now occurring. Is this good, or bad? Is it something to be encouraged, or discouraged? How is order and direction to be introduced and maintained in the system complex of medical care in society? Can this be done by the voluntary assumption of responsibility within the free enterprise system or will compulsion be necessary through governmental regulation and control? Can our traditional democratic political system, in medicine or in society, cope with these ever more complex social problems within the dimensions of individual freedom? Will this require some new adaptation in the current political structure of organized medicine? And, if so, what?

These are all pressing questions which strike at the very roots of medicine and of our culture. Medicine plays a central role in our turbulent society, and certainly will continue to do so in one way or another. But the course to be followed is not clear. The report of the California Medical Education and Research Foundation's study on the role and responsibilities of medicine in society will be eagerly awaited with the great expectation that it will show the path by which modern medicine can satisfy the requirements of modern society and so continue to play a leading role in the advancement of mankind.

MALCOLM S. M. WATTS, M.D.

Report of Ad Hoc Committee No. 2

IN LIGHT of the wide interest in the various but related subjects that were referred by the 1962 House of Delegates for study by Ad Hoc Committee No. 2, it seems appropriate to publish the report of that committee and also a minority report by one of the members of the committee. The reports as they were made to the 1963 House of Delegates are printed in this issue, beginning on page 350.



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 490th Meeting of the Council, Los Angeles, Ambassador Hotel, March 27, 1963.

The meeting was called to order by Chairman Anderson in the Lido Room of the Ambassador Hotel, Los Angeles, on Wednesday, March 27, 1963, at the hour of 4:00 p.m.

Roll Call:

Present were President Sherman, President-elect Doyle, Speaker Quinn, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors Wilson, Todd, Gooel, O'Neill, Bullock, O'Connor, Ham, Dalton, Murray, Davis, Miller, Campbell, Kaiser, Anderson and Cosentino. Absent for cause, Councilors MacLaggan, Rogers, Watts, Hudson, Dozier and Grunigen.

A quorum present and acting.

Present by invitation were Messrs. Hassard and Huber, legal counsel; Messrs. Hunton, Whelan, Thomas, Marvin, Collins, Klutch, Clancy and Clark, and Doctor Batchelder of C.M.A. staff.

Introduction of New Members:

The chairman introduced Doctors Elmer F. Gooel and Charles B. Hudson, newly elected as members of the Council.

1. *Election of Officers:*

On nominations duly made and seconded in each instance, the following officers were unanimously elected: Chairman, Carl E. Anderson; Vice-Chairman, Burt L. Davis.

2. *Administrative Appointments:*

On nominations duly made and seconded in each instance, the following were unanimously appointed for one-year terms: Secretary, Matthew N. Hosmer; Editor, Dwight L. Wilbur; Executive Secretary, John Hunton; Legal Counsel, Peart, Baraty and Hassard.

3. *Committee Appointments:*

The chairman, the Council concurring, named the following members to serve on the committees indicated:

(a) Finance Committee—Doctors Davis, chairman, Campbell, Dalton, Murray, O'Neill.

(b) C.P.S. Board of Trustees (by ballot vote)—Doctors Davis, Rogers, Dalton.

(c) Advisory Committee to Woman's Auxiliary—President Sherman, President-Elect Doyle, Secretary Hosmer, Doctors John G. Morrison and Franklin P. Ham.

(d) Committee on Legislation—Doctors Dan O. Kilroy, chairman, Samuel R. Sherman and Stuart C. Knox.

(e) Committee on Committees—Doctors Doyle, chairman, Sherman, Wilson, Quinn, Anderson, Dozier, Miller, O'Neill, Rogers, Todd, Cosentino and Hudson.

4. *Research on Government Financed Medical Care Plans:*

Discussion was held on a proposal to retain a member to review government financed medical care plans outside the country. On motion duly made and seconded, it was voted to decline the proposal that the Association pay travel funds for this study.

SAMUEL R. SHERMAN, M.D.	President
JAMES C. DOYLE, M.D.	President-Elect
WILLIAM F. QUINN, M.D.	Speaker
IVAN C. HERON, M.D.	Vice-Speaker
CARL E. ANDERSON, M.D.	Chairman of the Council
BURT L. DAVIS, M.D.	Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D.	Secretary
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5. *Health District Taxes:*

Discussion was held on a measure before the State Legislature which would eliminate duplicate tax structures for local and county health districts which overlap. On motion duly made and seconded, it was voted to refer this measure to the Committee on Legislation for consideration.

Time and Place of Next Meeting:

The chair announced that the next meeting would be held in San Francisco on April 27, 1963.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 4:30 p.m.

CARL E. ANDERSON, M.D., *Chairman*
MATTHEW N. HOSMER, M.D., *Secretary*

Council Meeting Minutes

Tentative Draft: Minutes of the 491st Meeting of the Council, San Francisco, Hyatt House, April 27, 1963.

The meeting was called to order by Chairman Anderson in the Hyatt House, San Francisco International Airport, on Saturday, April 27, 1963, at 10:00 a.m.

Roll Call:

Present were President-Elect Doyle, Speaker Quinn, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors MacLaggan, Wilson, Todd, O'Neill, Bullock, O'Connor, Ham, Rogers, Dalton, Davis, Miller, Watts, Campbell, Hudson, Anderson, Grunigen and Cosentino.

Absent for cause, President Sherman, Councilors Gooel, Murray, Kaiser and Dozier.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Klutch, Clark, Tobitt, Edwards, and Bowman, Mrs. Griffith and Doctors Batchelder and Miller of C.M.A. staff; Messrs. Hassard and Huber of legal counsel; Doctor Dan O. Kilroy, legislative chairman and Messrs. Read, Salisbury and Putnam of the Public Health League; county executives Lingerfelt of Fresno, Geisert of Kern, Field and Baker of Los Angeles, Colvin of Monterey, Donovan of Santa Clara, Donmyer of San Bernardino, Nute of San Diego, Neick of San Francisco, Wood of San Mateo, Brown of Sonoma, Rosenthal of Forty First, Blankfort of Marin and Greene of San Fernando Valley; Doctor Malcolm Merrill, state Director of Public Health; Doctor Lester McDonald and Mrs. Eunice Evans of the State Department of Social Welfare; Doctors Galliano and Rudin of the State Department of Mental Hygiene; Mr. Robert Garrick, consultant; Messrs. Paolini, Wahlberg, Heller and Nyron of California Physicians' Service; Doctors T. Eric Reynolds, Warren L. Bostick and others.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 489th meeting of the Council, held March 23-27, 1963, were approved.

2. *Membership:*

(a) A report of membership as of April 24, 1963, was presented and ordered filed.

(b) On motion duly made and seconded, 1,131 delinquent members whose dues had been paid by April 24, 1963, were voted reinstatement.

(c) On motion duly made and seconded, 22 applicants were elected to Associate membership. These were: Virginia Y. Blacklidge, George M. Keranen, Emanuel Rollins, Ruth C. Steinkamp, Irving R. Tabershaw, Alameda-Contra Costa; Aaron G. Fingerhut, Joyce D. Fraser, G. Gordon Hadley, Alan King, Bella F. Schimmel, Joel Solomon, John Lincoln Smith, Los Angeles County; Dorothy J. Allford, F. E. Ferguson, Arnold Z. Geller, Riverside County; Richard C. Murphy, Marin; Lloyd L. Brandborg, Ernst Paulsen, Marion E. Roudebush, San Francisco County; Paul E. Spangler, San Luis Obispo County; Thomas M. Spaulding, Stanislaus County; Edward C. Cummings, Ventura County.

(d) On motion duly made and seconded in each instance, 18 members were elected to Retired Membership. These were: Vincent P. Graham, Alameda-Contra Costa; Verne E. Eastman, Arthur J. Langan, Charles H. Lewis, Carl L. Mulfinger, Paul H. Smitgen, Leigh F. Watson, Los Angeles County; John M. Bulpitt, Zoe E. Bulpitt, Ralph Hawes, S. Theron Johnston, Harvey C. Maxwell, Helen R. Robertson, Orange County; Albert E. Larsen, M. Laurence Montgomery, San Francisco County; J. Karl Beck, Ralph Pawley, Riverside County; J. Leslie Spear, Sonoma.

(e) On motion duly made and seconded in each instance, reduction of dues were voted for 22 members for reasons of prolonged illness or postgraduate study.

3. *C.M.A. Mailing List:*

A request for use of the Association mailing list was received and, on motion duly made and seconded, referred to the Scientific Board with authority to act.

4. *Committee on Legislation:*

Doctor Dan O. Kilroy, chairman of the Committee on Legislation, reviewed a series of measures pending before the state Legislature and reported on others which had not received approval or were awaiting assignment to interim committees for study. Among these are bills to amend the program for medical assistance to the aged, to prohibit the ownership of pharmacies by physicians and to require California licensure for clinical laboratories located out of state but used by California physicians and a proposal to restrict charges for referred services. On the latter proposal, it was regularly moved, seconded and voted to refer the subject matter to the appropriate committee for study. The chairman referred the laboratory study to the Commission on Community Health Services.

5. *State Department of Mental Hygiene:*

Doctors Galliano and Rudin, reporting in behalf of Doctor Dan Lieberman, newly named Director of the Department of Mental Hygiene, reported that the department was in the process of developing a program to cooperate in the review of state mental hospitals which the Association has agreed to undertake. They also reported on a legislative bill which would increase the contribution by the state to community mental health care centers.

6. *State Department of Public Health:*

Doctor Malcolm Merrill, State Director of Public Health, gave a report on several communicable diseases which have come under departmental scrutiny lately. These included botulism originating in canned tuna, A2 type influenza, meningococcic meningitis and poliomyelitis. He stated that 10 million doses of Type I oral polio vaccine had been given, 9,700,000 of Type II and 7,700,000 of Type III. As to the first type, 15 cases of paralytic polio had been reported within 30 days of the immunization and five had been determined to be compatible with the immunization dose. No cases resulted following Type II vaccine and 15 following Type III, five of which were compatible timewise with the dosage.

7. *State Department of Social Welfare:*

Mrs. Eunice Evans supplied the members of the Council with statistical reports on the first full year of operation of the Medical Assistance to the Aged program and answered several questions from members.

8. *California Physicians' Service:*

Doctor T. Eric Reynolds, president of C.P.S., reported briefly on the program to convert all contracts using the A and B fee schedules to more recent schedules. Very few of the old contracts remain and offer problems of conversion but the number of persons covered is diminishing.

9. *Medical Executives Conference:*

Joe Donovan, chairman of the Medical Executives Conference, reported that the conference had voted to voice its commendation of the Association for the production of a pamphlet outlining the types of insurance coverage available to the over-65 age group.

The conference is also recommending meetings north and south, he reported on the Operation Homecare program of the A.M.A., covering national legislative activities. Members of the conference are also looking into the classification as Associate Members of physicians in various positions.

10. *California Hospital Association:*

Doctor Anderson reported on his attendance at a meeting of the California Hospital Association, at which agreement was reached on the need to use staff members for communications programs and on the need to provide for community and regional hospital planning if governmental planning programs are to be avoided. It was also agreed that the C.M.A. and C.H.A. should exchange their respective Newsletters to governing board members.

11. *Staff Report:*

Mr. Hassard read a letter received from an A.M.A. official in which he took occasion to name a number of members of the C.M.A. who are serving with great credit on A.M.A. Councils and committees.

He also reported on a request received from an officer of a specialty society suggesting that his specialty be invited to send a representative regularly to attend Council meetings. On motion duly made and seconded, it was voted to reaffirm the present policy to the effect that Council meetings are open to all members of the Association.

12. *Legal Department:*

Mr. Hassard reported that the State Supreme Court had denied a hearing on appeal from a lower court decision which limited the scope of practice of chiropractors and specifically prohibited the delivery of babies by chiropractors. This denial has the effect of establishing the lower court's findings as the law.

13. *International Student Conference:*

A proposal was presented asking C.M.A. participation in an international student program planned for San Francisco in 1964, to which some 450 medical students would be invited from all countries. On motion duly made and seconded, it was voted to ask the President, Council Chairman and Councilor Watts to study the proposal and report back with recommendations.

14. *Outpatient Radiology Fees:*

Discussion was held on the question of fees paid by C.P.S. for radiological services for outpatients. On motion duly made and seconded, it was voted to appoint Doctors Davis, Dalton, Rogers, Murray, O'Connor and Miller as a council committee to review this matter and report back to the Council. Doctor Davis was named as chairman.

15. *California Medical Education and Research Foundation:*

Doctor Anderson reported on a meeting held by California Medical Education and Research Foundation at which C.M.E.R.F. commenced planning for implementation of the study on the Role of Medicine in Society which was assigned to it by the Council and the House of Delegates. Doctor Anderson also reported that the C.M.E.R.F. Board voted to create a special committee for this project consisting of the C.M.E.R.F. Directors and Doctors Sanford Feldman, Elmer Gooel, Gerald Shaw, Paul Hoagland, Malcolm Watts and John Rumsey to this committee.

16. *Bureau of Research and Planning:*

Doctor Ham reported that the Bureau is considering the questions (1) can the quality of medical care be measured, and (2) if so, how? Studies are under way in three counties at this time as a preliminary to these questions. The Bureau is also, Doctor Ham reported, carrying on a continuing study on the level of fees maintained on a selected list of recurrent procedures. Copies of the findings will be given the Council for approval.

17. *Commission on Public Agencies:*

Doctor MacLaggan, chairman of the Commission on Public Agencies, reported that hospital studies had been completed in three counties and were under way in several more.

Doctor Hudson, chairman of the Committee on Veterans' Affairs, reported on conferences held with officials at the California Veterans Home and of the State Department of Veterans' Affairs. Agreement was reached in these conferences on the desirability of a limited program of rehabilitation, a move in which the committee concurred. Doctor Hudson presented three recommendations, all of which, on motion duly made and seconded, were approved. These were:

1. The medical deputy director of the State Department of Veterans' Affairs be appointed an ex-officio member of the committee.

2. Recommend to the Governor the appointment of a physician to the Veterans' Board, nominations to be made by the Council.

3. Recommend to the Governor appointment of an ad hoc committee on a rehabilitation program in California Veterans' Home.

Doctor MacLaggan also reported that the Association, through the Committee on Mental Health, has been requested to make a survey of all state mental institutions. Doctor MacLaggan presented an outline of the proposed survey, including a budget item of approximately $8,500 for preliminary work. Doctor Davis, chairman of the Finance Committee, reported that the Finance Committee had considered and favorably recommended the budget item. On motion duly made and seconded, it was voted to authorize the Committee on Mental Health to proceed with a preliminary survey and to approve the proposed budget.

18. *Component Officers' Conference:*

Discussion was held on appointment of a committee to make plans for the program of the Annual Component Officers' Conference in 1964. On motion duly made and seconded, it was voted to name such committee. The chairman named Doctors Dozier (chairman), Gooel, Bullock, Watts and Grunigen.

19. *Bureau on Communications:*

Doctor Bostick gave a progress report, including the distribution of more than 100,000 pamphlets on insurance coverage available to the over-65 age group and outlining some of the regular programs of the bureau. He also reported plans under way to hold conferences north and south on federal legislative matters and on a national legislative conference recently held in Chicago.

20. *Nutrition Conference:*

An invitation for the Association to be listed as a co-sponsor of a nutrition conference planned by various departments of University of California was presented and it was agreed to ask the staff to look into the conference with authority to act.

Time and Place of Next Council Meeting:

It was agreed that the next Council meeting would be held at the Biltmore Hotel, Los Angeles, on Saturday, June 1, 1963.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:15 p.m. in the memory of William M. Whelan, Sr.

Carl E. Anderson, M.D., *Chairman*
Matthew N. Hosmer, M.D., *Secretary*

Report of Ad Hoc Committee No. 2 of the 1962 House of Delegates

To the Speaker and Members of the House:

The 1962 House of Delegates of the California Medical Association was challenged by a series of resolutions relating to welfare programs and doctors' fees. The issues were considered by Reference Committees, then a group of closely related resolutions on these topics (18, 21, 22, 39, 40, 53, 54 and 57 introduced at the 1962 House of Delegates)* were referred to a Special Study Committee of the House for more detailed investigation and recommendation. This is the report of that Special Committee (House of Delegates Ad Hoc Committee No. 2).

The members of the Committee are: Joseph F. Boyle, Los Angeles; Donald R. Fitch, Glendale; George K. Herzog, Jr., San Francisco; Ralph M. King, La Mesa; Howard W. Lindsey, San Mateo; John R. Peterson, Riverside; S. Robert Polito, Reseda (Consultant); Robert F. Schell, San Rafael; Addison R. Udall, Merced; Ralph Teall, Sacramento, Chairman.

Your committee has held several full day meetings, has heard from a variety of well qualified witnesses, and has considered implications of each resolution.

Original divergencies in viewpoint tended to recede as discussions developed and as witnesses were heard. This report summarizes the general conclusions reached.

I

Should third party payments for doctors' services be made to the doctor (vendor) or the patient (recipient)?

At the outset, Committee sentiment strongly favored recipient payment. It was pointed out that a poll of C.M.A. members taken in 1957 favored direct payment to the doctor, by a majority of the votes cast; but many of the Committee members felt that such response represented an earlier attitude, which did not fully consider all the implications that have now become more apparent, and that a new poll at this time might well favor recipient payment.

One of the Committee members pointed out that, in matters of fees, some doctors are paradoxically willing to forfeit freedom of individual responsibility for expediency, while insisting on an otherwise undefiled doctor-patient relationship. He comments that "the acceptance of the vendor concept is a classic example of giving up a freedom in order to gain a security."

The Committee reviewed the recent unhappy experiences of the medical profession in Saskatchewan, Canada, and the methods of payment presently used to produce subsidy, by government, for medical care insurance in the Commonwealth of Australia.

The Saskatchewan experience clearly demonstrates the unfavorable end result of increasing the role of government and extending its unilateral control of conditions and fees for doctors' services to the point where government, by law, becomes the sole and exclusive purchaser of medical care; and is thus in a position to dictate completely all conditions and all fees for all doctors' services in an entire province.

Australia illustrates a much more favorable development. Here the doctor sets his own fees and largely determines the conditions of his service. The patient retains full responsibility for paying the doctor and for submitting his claim forms based on minimal basic information supplied by the doctor. The patient submits a claim to the insuring agency, which reimburses him according to a predetermined schedule of benefits (not necessarily relating to the doctor's charge); only then does the government subsidy come into play by reimbursing the insuring agency for a portion of its payment to the insured. For indigent patients, the government pays the doctor directly on a pre-established fixed fee schedule.

Extensive testimony was heard from sociologists and welfare administrators to the effect that some welfare recipients are apt to have little understanding of broad economic and social principles, are apt to be inept in management of their own personal finances, and often lack a sense of personal responsibility.

It was the conclusion of YOUR COMMITTEE that direct vendor payment was often legally necessary for welfare recipients.

Extensive study was made of the philosophy and the practical circumstances surrounding initiation of the present method of vendor payments for doctors' services in welfare programs.

It became clear that this method of payment arose from increasing federal government involvement in the field. This stimulated state programs through financial grants-in-aid, but introduced corresponding regulatory controls by central federal agencies.

A brief historical review confirmed the assumption that a primary objective of welfare programs should be, and is, to return wards of government to a self supporting position in society as early as possible. It was observed that there had been wide variations in attitude, in the past fifty years, as to whether this objective was best served by provision of goods and services in kind, or by providing the money to secure such goods and services. At the present time, a trend of social welfare and governmental agencies regarding medical services is to provide these services in kind. Further testimony by these experts indicates that this is in direct conflict with what is today considered *good* social work theory; and is the only area in which provision of services in kind is currently employed, and represents a rejection of past experience in welfare programs in which services in kind were abandoned in favor of cash for food, housing and other services, when it was found out that provision of goods and services in kind leads only to: (1) decreased quality, (2) increased cost, (3) loss of incentive and responsibility, and (4) decreased opportunity for the recipient to ever improve himself. Additional testimony by some welfare administrators themselves indicated that the lack of individual responsibility engendered by current welfare department practices tends to expand the degree of irresponsibility and leads to increasing abuses.

This trend, a reversal from earlier attitudes, became formalized in welfare programs by changes to Federal Social Security legislation which occurred in 1950.

The attitudes of the American Medical Association toward such federal legislative changes were reviewed; it was found that the A.M.A. had taken no clear stand either for or against vendor payments, either on philosophic or practical grounds. (Several State Medical Associations were, in fact, already on record requesting or demanding vendor payment programs for doctors' services.) In California, however, there had been a traditional pattern of providing medical services for indigent patients by a combination of donated service to county hospital staff activities, donated outright charity services in private practice, and by direct purchase of required medical services in the open market from additional cash grants to the welfare recipients. (Experience in certain California counties suggests that this method produced a substantially lower unit cost than exists in present methods.)

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*Dr. Boyle presented a minority report, which is printed at the end of the majority report. Resolutions embracing the proposals of each were presented to the House of Delegates. The resolutions on which the House took positive action are printed on page 361.

The initiation during 1957 in California of welfare medical care programs subsidized by federal grants did, therefore, represent a sharp break in traditional California patterns of providing medical care to indigents. This came about through required responses to federal regulations—in order to qualify for large sums of money grants-in-aid to California from federal tax resources.

The severe disturbance, and resentment, of some California doctors toward "vendor payment" (which is not yet completely satisfied) as manifested in the resolutions and actions of this House of Delegates in 1958 and 1959, rests on this change in method and source of payment for indigent medical care.

Further testimony before your committee suggested that existing and proposed welfare medical care programs should not be regarded as extensions of original poor relief philosophies and laws, but as an entirely different social philosophy based on the concepts of "social insurance." They are not clearly related to relief of poverty, though proponents of "social insurance" are often willing to foster the mistaken reference in order to justify their programs.

While there was no unanimity of opinion in your Committee as to the theoretical merit of vendor or recipient payments in returning indigents to self sufficiency, YOUR COMMITTEE CONCLUDED that the immediate future did not offer great possibility of early reversal of the vendor method of payment for indigent medical care programs, and that the interests of the patients and the doctors would best be served by studying methods of providing the best medical services possible in the present framework of payment.

Extensive discussion was held, and testimony was received, as to the possibility of assignment of benefits by the insured to the attending physician, or of payment by the insuring agencies through the medium of joint checks drawn in the name of both the doctor and the patient. Such methods are apparently applicable only under insured programs, and are not directly permissible under federal regulations contolling indigent medical care. However, the same objective might be reached by government purchase of insurance for its wards; the insuring agency could then issue joint checks or honor assignments of benefits. Testimony was received from insurance administrators that assignment of benefits and joint check payments were least effective with indigents.

It should be noted that the purchase of insurance to pay for medical care provided to welfare patients is authorized under the federal regulations and is being used in certain other states, notably Colorado. It has been under some degree of observation and study in California, with sympathetic understanding by the State Department of Social Welfare, and a pilot program is under way in Santa Barbara County. It is the opinion of YOUR COMMITTEE that the California Medical Association should redouble its emphasis on this approach to the problem.

YOUR COMMITTEE reached no conclusion on the use of joint checks or assigned benefits, but feels that programs should be so arranged, whenever possible, as to authorize such payments at the option of the attending doctor.

The difficulties inherent in administering welfare medical care programs by insurance were discussed. These difficulties arise in considerable measure from the inability to decide in advance exactly who the beneficiaries will be, who will require medical care from month to month, what the case load will be and what premium should be collected. In spite of these difficulties, YOUR COMMITTEE is strongly of the opinion that government should provide medical care for welfare recipients through an insurance mechanism, and should not discharge this responsibility by acting as a self-insurer.

YOUR COMMITTEE also feels that there should be an intermediary agency such as C.P.S. between the doctors and government, which can assume responsibility for negotiating as to the scope of services to be provided and the amount of money required to provide this scope of services. Such an agency could then carry on independent consultation with doctors as to fee levels and fee schedules. This would obviate the necessity of repeated visits by doctors to state officials asking for increases in individual fees.

II

Should the third party pay all or only part of the doctor's fee?

Attitudes of your committee strongly favored the payment of part of the fees with retention of certain financial responsibility by the individual patient ("indemnity").

For indigent medical care programs, however, THE COMMITTEE realized that the whole concept of government welfare payments rests on careful analysis of the needs of the persons served and the provision of just enough money to resolve these needs. If the budget is properly prepared in the first place, there is no extra money to be applied by the recipient as an extra payment above the welfare allowance. THE COMMITTEE therefore concluded that "service" payment *for welfare recipients* is probably necessary and desirable.

It was also pointed out to the committee that there is a persistent demand by many individuals and many groups for "service coverage" in medical care insurance, and that there is a sizable market available for such coverage, even for persons whose income is adequate to meet other human needs. It was recognized that this public demand must be met. Because of the risk, however, of control of services and fees by such a service agency, it was felt that if there is to be an offering of service coverage, doctors must be very zealous to maintain control of any such service type offering. This apparently can be achieved through the use of medical care foundations and of the California Physicians' Service. It is, therefore, essential that the California Physicians' Service and the foundations receive continued support and endorsement by the medical profession. However, it must be carefully maintained as an intraprofessional and public position that the support of C.P.S. does not necessarily imply that "service" coverage is the method recommended by doctors as the ideal or preferred method of medical care insurance coverage for all income groups. Because of the responsive and responsible relationship between patients and doctors—in both directions—YOUR COMMITTEE favors the indemnity approach for adequate income persons.

III

At what level should doctors' fees be paid by welfare agencies?

YOUR COMMITTEE agreed in principle that this level should be at the "going rate" (defined as the usual charge for private patients or equal to the usual and customary amount paid for professional services by the public generally) and that doctors should not be expected to subsidize government programs by accepting lower than usual fees when the government has undertaken to provide medical care for individual patients. However, your committee received testimony that this "going rate" was very difficult to define. Variations within the state were reported to follow specialty groups more closely than geographic regions, even after careful and repeated studies attempting to define regional fees. Further evidence was received on the difficulties of attempting to relate fees to the costs—particularly the overhead costs—of providing medical services. No clear relationship of costs to fees has been established. Even the trend to uniformity of "usual" charges within the practice of each individual doctor was found to be not yet well enough defined to permit an accurate analysis of what is the "going rate," or to permit its subsequent policing (except under the "usual fee plan" presently being used in Riverside County).

The very immediate and practical need of the state government for some equitable basis on which to pay fees was recognized. A number of witnesses suggested that government is limited by law and by budget in the total amount of money that it can pay for any given fiscal year, yet is committed by law, by usage and by demand of doctors and patients alike to a scope, a quantity, a character and distribution of medical care which it must purchase. The level of fees paid must then be determined, in general, by a relation between the funds available and the services provided; which has a tendency to overlook the perfectly proper needs of the doctors who provide the services.

While expressing sympathy to the needs of the doctors, the basic theme of such witnesses was that, as responsible administrators of tax money, they should not pay more than was essential to secure the services desired. One responsible witness indicated that the fees paid should be only those which would enlist the participation of the majority of the good physicians in each community, and guarantee the provision of a high quality of medical service. Where this base of participation and quality was available, it was not proper for responsible administrators to pay more.

There is some evidence, in certain state programs already in existence, that a decline in quality does occur when fees are so low as to appeal to only a small number of physicians.

Several of the resolutions submitted, and many reference committee witnesses, have sought to resolve the dilemma of fees by insisting on payment of "usual, customary, and reasonable fees." Your committee received testimony from a very careful study by C.M.A. staff, to the effect that these terms have no precise meaning in law, or in daily economic usage. The terms are not sufficiently defined, in the light of our present usage, to justify any existing schedule of fees to be applied by state agencies. The same conclusions applied to requested schedules of "realistic" fees or "just" fees or "normal" fees.

While each individual doctor may be able to judge what is "realistic," "just," "normal," "usual," or "reasonable" in his own practice, there is as yet no authoritative dollar figure applicable statewide, or even regionwide, which can be used by government agencies.

Lacking clear agreement by a majority of doctors throughout California on the exact dollar amounts of such "realistic" fees, government administrators must determine for themselves what to pay. Yet, administrators must pay fees in specific dollar amounts. This seems to place the government in the position of having to set doctors' fees. YOUR COMMITTEE is clearly of the opinion that this is not properly the right or the responsibility of any governmental agency.

Each doctor should retain the right to establish his own fee for his own services. But government contends that it cannot simply pay the fee charged by each doctor, unless and until each doctor will post in advance a schedule of his own personal and individual usual, customary and reasonable fees for an agreed calendar period, and unless some responsible reviewing authority, representing the doctors, can process each claim to confirm adherence to such posted schedules. This is not yet possible in California as a whole; it has been well established only in the current experiments in Riverside County. In that county, a clear definition of the meanings placed by its doctors on the terms "usual, customary, and reasonable," does exist. It has been found valuable, but it has not resolved all disputed cases.

Careful studies and recommendations from the C.P.S. study committee of the House of Delegates in 1952, and subsequent review and recommendations of the medical services commission in 1953 regarding a "usual fee plan" for California, have been adopted by the House of Delegates. These have never been implemented, however, to the point of being able to determine a county-wide composite fee list, or a statewide composite fee list (which binds no individual physician but which can guide third party fee levels).

In the absence of agreed levels of usual, reasonable, customary fee schedules, and in the need of administrators to find some level of fees which they can pay, California Medical Association has been asked to make recommendations to government. Various C.M.A. officers and committees have conferred with government officials for this purpose and have made certain recommendations to governmental agencies.

At times, this House of Delegates has been asked to create a group of C.M.A. officers, empowered to negotiate or bargain with government for such fee schedules. Up to the present time the House has not granted such authority. It is the opinion of YOUR COMMITTEE that it is not necessary, possible, or desirable for C.M.A. to negotiate fees for all its members (in the sense of agreeing that, if any given level of fees is paid, all, or nearly all, C.M.A. physicians will provide services).

In essence, what is wanted is the best available in medical services for the least cost. This is a realistic objective, but the highest quality of anything for the lowest price cannot be obtained simply by legislation, by compulsion or by coercion. Providing a guarantee of a service not obtained in the open market, or guaranteeing payment for a service, does not necessarily secure high quality of such services for anyone. World experience for the past 100 years in medical care would indicate a somewhat opposite effect.

Maximum fixed fee schedules, pegged at less than the usual private charges tend to produce a shortage of high quality medical care. Minimum fixed fee schedules tend to produce a surplus of mediocre medical care, concentrated in a few hands; efforts to raise such minimum schedules have the effect of a subsidy for these few hands in providing mediocre care.

The optimum method of relating fees to quality of care would appear to be to allow free market, open competition and variation. This must rest on critical and informed value judgment by the patient. Such judgment, in turn, must be guided by the medical profession (which is the only group presently competent to evaluate the quality of medical services). This evaluation at present relies on such activities as review and audit committees, hospital staff certifications, and many other continuing efforts to establish and raise standards of practicing physicians (again without compulsion or coercion, but by processes of education and persuasion).

One of your committee members is convinced of the great potential value of digital and analog computers to evaluate and control quality as well as to resolve financial problems in medical practice.

Doctors are constantly working to achieve, to maintain and to police a high quality of service for all patients treated, regardless of financial considerations. It is, therefore, reasonable for welfare departments to assume that, when a doctor undertakes care of a patient and agrees to accept the fee offered, the patient will receive a high quality of service.

Welfare administrators recognize that success in achieving a high quality of medical service depends on participation by a large majority of practicing physicians.

A state agency or agencies (presently paying 80 per cent of fees assumed to be the going rates for 50 per cent of the doctors in California), will determine adequacy of these fees by observing whether or not physicians do participate in the program.

It is not the proper function of C.M.A. to plead for special fees for doctors. In the opinion of government administrators when doctors voluntarily participate in such programs, for the fees which are offered, the doctors are themselves justifying the adequacy of such fees.

YOUR COMMITTEE believes that C.M.A. officers should confine C.M.A. activities in this field to recommendations as to the level and relativity of fees which, in its opinion, will be adequate to secure widespread participation in welfare medical programs by California physicians, and will thus insure an adequate scope and quality of doctor services. YOUR COMMITTEE further believes that when the C.M.A. Council and officers have made such recommendations, they should not then urge C.M.A. members, by any form of moral or ethical persuasion, to conform or participate under such a recommended schedule; but rather should leave each member completely free to decide for himself (a) whether he chooses to provide his services for the fee which is offered, and (b) whether the fee and the authorized conditions do, in fact, permit him to provide a scope and a level of services of high quality. Briefly, this means that each individual doctor must retain the right to set his individual fee for any service he provides within the framework considered by his fellows as reasonable and fair, and must be guaranteed the right, without coercion, to participate or not participate in any offered program as he, himself, decides.

When C.M.A. makes recommendations to state government, it should be noted that C.M.A. acts as a consultant and not as a party to active negotiation or bargaining; it has neither need nor authority to offer binding commitments on its individual members. Caution is also advanced that relative value studies, when used in such recommendations, must be carefully controlled and continually updated to reflect accurately what are current practices in California medicine rather than manipulated opinions as to what one or another group of doctors feels to be desirable practices.

Consideration was given by your committee to the possibility of "non-participation" by physicians as a group, if certain fee schedules or other conditions were not granted. YOUR COMMITTEE concluded that this served no useful purpose; that *friendly cooperation* seeking useful answers was more in order, and that the same objectives would be more effectively achieved if each doctor felt himself completely free to accept or reject on an individual basis the imposed conditions of service and the fees offered under the programs.

Discussion was held as to the possibility of paying the same dollar amount to each beneficiary (patient) for any given designated medical service, with the idea that, even though such payment failed to provide the full fee of the doctor it could be used as partial indemnity toward such fee. The theoretical and practical objections to such an approach in indigent welfare medical programs have already been discussed; these are augmented by the charge in the basic law that the benefits for each recipient must be uniform. It is not clear whether uniformity in dollars, but not in units of service, would fulfill this charge.

After much discussion on relationship between fees and quality YOUR COMMITTEE concluded that level of fees and scope of programs were closely interrelated, and did have a significant role in control of quality of medical services provided. This does not arise from any conscious effort by the doctor to provide reduced quality or reduced services by reason of fees below his usual level. It was reaffirmed that each physician should be constantly stimulated by his professional societies to provide the highest possible quality to each patient regardless of source or size of payment. It has, however, been demonstrated adequately in California that no physician can devote a major amount of his daily professional time to part or low pay patients without significantly diluting the time and concentration of effort, and the effectiveness he can bring to bear on all patients—whether part pay or full pay—whom he serves. In addition, a sharp limitation of scope of benefits—limiting auxiliary needs such as types of investigation, laboratory and x-ray studies, and types of medication or other therapy which can be used at the expense of the governmental agency—has an inevitable effect in lowering quality. The attending physician cannot control this lowering of quality by any measure other than direct charitable contribution from his own personal resources of money or time.

YOUR COMMITTEE is aware that some charitable contribution may often be the best way to resolve the doctor service need of the truly indigent patient, but the doctor's charity does not resolve the need of such patient for medication, physiotherapy, hospitalization and related medical goods and services. In addition, YOUR COMMITTEE feels that when a doctor extends charity to an indigent patient, it should be recognized as his personal charity, and not be regarded as a service provided by an all wise or all powerful governmental agency.

A number of changes are needed to increase the effectiveness of present state medical welfare programs. Among them is elimination of the requirement that a doctor must submit a bill for services before his prescription of medication or other services can be honored. It is our understanding that efforts to bring about such changes are under way at this time.

YOUR COMMITTEE is deeply interested in the necessity of establishing minimum standards for medical care programs: it strongly favors extension of such actions, already under way by C.M.A., as the recommended "components of an adequate health insurance program." In this activity, however, it is vital to remember that C.M.A. is acting only in the capacity of consultant to the patient, and in lesser degree to the insurer, and not as a direct party in the insurance contract between insurer and insured. Doctors are admittedly not competent in the field of marketing, competitive bidding, or buyer's budgets, and are only partially competent in understanding current buyer's demands.

Continued free choice of physicians is regarded both by doctors and by administrators of welfare programs as vital to the high quality of medical care. It is recognized, however, that such free choice in welfare programs is restricted to free choice of those doctors willing to provide services under the conditions and fees established; which again points up the desirability of maintaining these conditions and fees at such a level that a majority of highly competent physicians may voluntarily choose to participate without any coercion by professional societies, government or any other agency.

Throughout its discussions YOUR COMMITTEE was conscious of the need to distinguish between principles applicable to indigent patient medical care programs and programs of insurance for the self-supporting and self-reliant segments of our population (which are more representative of the values and achievements of contemporary American society). Because of the possibility of further spread of government programs of medical care for non-indigent persons, *it is essential to recognize that fee schedules, conditions of service, proper responsibilities of government agencies and relationships between government and C.M.A., as well as theories of doctor participation which are applicable in indigent programs are not directly applicable to non-indigent programs.* The principal points of common ground are our insistence on a standard of high quality of medical service for all the population, and the cooperation of the medical profession in recognizing and resolving problems and in controlling abuses. The danger of uncritical extension of principles for indigent medical care to other segments of the population is clearly evident in the Saskatchewan experience.

It is also clear that the definition of indigency is a legislative result, reflecting current concepts of the nature and function of society.

IV

San Fernando Valley's Individual Responsibility Program was explained and studied.

The author of the program testified that (1) the program is designed to implement the principle of individual responsibility in a visual and tangible manner; (2) individual responsibility is important for the survival of medicine under the free enterprise system; (3) to speak about this responsibility and not apply it makes medicine vulnerable to the total collectivists and subject to the same disaster that befell our Canadian neighbors.

San Fernando Valley doctors felt the concept should be tangible, so that doctor, patient and third parties could think, see and practice individual responsibility.

They observed that when no third party is involved, individual responsibility is automatic. When third parties become involved, the confusion pyramids. All those connected try to help, but there is a shifting of chores and responsibilities which leads to a design wherein third parties assume the role of director. Medicine needs no such director, either from private insurance or government.

San Fernando Valley doctors with this in mind, have developed a stepwise system to guide medicine away from third party control.

They stated the reasons for their attitude. They delineated everyone's natural chore in medical reporting for third parties. They climaxed the theory with a simple insurance form modified from one used successfully for years in the Southwest District of Los Angeles County. This form was the means for patients and third parties to see and feel that individual responsibility was a real entity—not just philosophical talk.

Your committee heard testimony to the effect that this program is being used in three areas of Los Angeles County and is under study elsewhere in California and the United States. In each of the Los Angeles areas, about a third of the members are using the program successfully.

Representatives of the insurance industry testified that they are processing IRP forms. One representative stated he would rather see doctors use the HIC form. Another representative stated he had no insurmountable problem processing the simpler IRP form.

Application of IRP to welfare programs was considered. There was discussion as to whether welfare recipients should and could share in the responsibility of submitting forms or managing money. It was pointed out that under the present program their responsibility is zero.

The current feeling among those practicing individual responsibility in regard to welfare programs, is to encourage more freedom of action on the part of the patient and physician. It was pointed out that this could be done by judicious use of vendor payments as either service or indemnity payments as per agreement between the physician and his patient.

With the objective of increasing individual responsibility, your committee is in agreement. These objectives include recognition that there is properly a high degree of personal responsibility of the recipient of money or services, in a medical care program, for his own financial arrangements, for his reports, and for compliance with the doctor's recommendations. The primary responsibility of the doctor is to the patient rather than to the government or any other third party. There is constant danger of dilution of this direct individual responsibility between doctor and patient.

There is already demonstrated abuse of the doctor's time, ability and facilities to discharge responsibility which belongs primarily to the patient, to the government or to a third party insuring agency. Much of this difficulty presently focuses on multiplicity of claim forms and pyramiding of questions in claim forms. Your committee is deeply aware of the need for continuing study in this field, to recognize improper demands on the doctor for information which should be supplied by others. The committee was reminded of continuing activities in claim form development by San Diego County Medical Society, by the Los Angeles County Medical Association and by C.M.A., through the Commission on Medical Services, as well as by the A.M.A., by the Health Insurance Council and some specialty groups. Further study and development of such report and claim forms is highly desirable.

YOUR COMMITTEE concluded that further evolution and experience, as well as extension, of the San Fernando plan can be very valuable and stimulating and should receive the interested attention of all concerned.

V

YOUR COMMITTEE has prepared a series of substitute resolutions to accomplish the objectives of those resolutions referred to it for study. It bespeaks your thoughtful consideration and your amendment or support of these resolutions as you see fit.

VI

Your committee has been impressed with the interest, devotion, competence, and general helpfulness of the C.M.A. staff in providing special studies, research, and coordination for this committee whenever requested to do so. We have also been greatly impressed by the willing and eager cooperative attitudes, in exploring these problems with a view to mutually satisfactory developments in the public interest, which have been shown by C.P.S. officials, by representatives of commercial insurance carriers, by state administrators and by sociologists, as they have been requested to confer with and advise us. To each of these we extend our thanks.

A Minority Report of Ad Hoc Committee No. 2

American medicine today is faced with the greatest challenge of its history. The advancing technology in the science of medicine, which has made it possible to offer the American people a type and quality of medical care undreamed of in the past, has brought with it increasing costs. Because of this, the average person is greatly concerned that he be able to afford the benefits of modern medicine for himself and his family both now and in the future.

In addition, the past 50 years have brought an ever expanding growth of socialism through the gradual extension of the Welfare State. Although this has in part been advanced by responsible officials of government striving for what they consider the "common good," and further encouraged by a group of public officials motivated principally by political expediency, the major impetus of this drive toward Welfare State Socialism has been provided by a small but well organized, dedicated and determined group of individuals who truly believe that this country can and should be socialized. Towards this end they are expending all their energies and while the socialization of medicine is but a small part of their plan, it is an important part of this plan.

It is the intent of these Welfare State Planners to expand government programs to ultimately provide Federalized medical services for the majority if not all the people of the United States. Anyone who does not recognize this fact simply has failed to make a realistic evaluation of the events of recent years and has ignored the experience of all other countries in the world in which the State has decided that it alone shall have the responsibility to provide medical services for its citizens. The mechanisms to accomplish this objective already exist in the Federal Department of Health, Education, and Welfare, and in the State Welfare Departments, where even now regulations have been formulated that dictate the control, type, and quality of medical services that are provided for rather large numbers of our patients.

This then is the challenge. The question is—are we prepared to face it. The American people do not want socialism and do not want socialized medicine. They do want quality medical care, free of extraneous control, conducted on the personal basis of private practice as we know it in this country at a price they can afford. They are anxious that we take the lead in preserving this type of medical service for them, but at the present time a large number of these people believe that the medical profession has failed to provide that leadership.

In recognition of the increasing activity of government in provision of medical services, a large number of resolutions were introduced in the C.M.A. 1962 House of Delegates. Several of these resolutions were then referred to this Ad Hoc Committee for consideration. The Committee has submitted its report. This then is the report of a minority of one, who feels that the Committee has failed to meet this challenge and has failed to recognize the basic principles involved and the distinctions that must be made. I submit this for your consideration. In this report, for many, there may appear divergence between what seems "*practical*" in the sense of immediate and obvious personal gain and the application of basic principles in which we all believe. However, before you discard this ideology, I ask that you consider carefully the nature of those principles upon which we of medicine must stand if we are going to (or even deserve to) continue as a truly free profession.

THE RESOLUTIONS

The resolutions submitted to this Committee must be divided into two groups, which present two diametrically opposite and necessarily incompatible points of view. *The first group, resolutions No. 21, 22, 39, and 40, ask that the C.M.A. act as a bargaining agency* for its members in order to obtain "equitable" treatment in the area of fees and fee schedules in welfare and other state controlled medical care programs. The proponents of these resolutions believe that socialized medicine is here to stay and will ultimately expand to include larger segments of the population, since this is the social climate of our times, and that the interests of the medical profession can be best obtained by collective negotiation and compromise with the controlling agencies.

The second group, resolutions No. 18, 53, 54, and 57, state that only through proper application of the principles of individual, personal responsibility can we retain control of the quality of medical care, preserve the individual freedom of the medical profession, maintain free enterprise in the practice of medicine, and serve the best interests of ourselves and all of our patients.

Although resolutions No. 53, 54, and 57, when originally presented to the House of Delegates, referred specifically to the Individual Responsibility Plan of the San Fernando Valley in Los Angeles County, discussion before the Reference Committee indicated a desire upon the part of the majority of delegates present to pursue a much deeper and wider application of the principles upon which this plan is founded. The obvious conflict between individual responsibility and the philosophy of collective negotiation for fee schedules ultimately led to the referral of all of these resolutions to this Ad Hoc Committee.

PRINCIPLES

Both groups are obviously concerned with providing the best possible medical care for as great a number of patients as possible. However, in pursuit of this end, we must first consider the principles involved. They are:

1. Medicine's only objective must be to provide the highest quality of medical care possible to every patient.

2. Quality of medical service can only be preserved by a profession free of external regulation and control.

3. Quality and cost can only be related when these are determined by the laws of action of the free market through which, in medicine as in any other services, each individual *will* receive the best possible medical care for the least possible cost. Free enterprise will accomplish anything better than socialism.

In examining how best to implement these principles, we must also keep constantly in mind that a principle is a statement of natural moral law and cannot be controverted or compromised any more than one can compromise or ignore the law of physical gravity. Unfortunately, while an effort to ignore the law of gravity produces an immediate and obvious effect, the results of an attempt to compromise the principles we are concerned with may be relatively remote. There may indeed be an apparent immediate gain, but there will be an inexorable, presently inapparent, but none-the-less real and unredeemable loss to follow.

In considering the opposite approaches to our current problems, the basic conflicts would appear to be the following:

1. That which is expedient and "practical" opposed by

a desire not to sacrifice control and thereby permit deterioration of quality in medical care.

2. Efforts to delay total socialization by compromise rather than by strict adherence to basic principles.

3. The recognition that the interposition of state into the care of any patient, including the indigent, brings with it undesirable control and deterioration of quality of services available, which is opposed by the fundamental desire of the physician to assist the truly indigent patient. Plus,

4. A recognition that there are abuses in the application of good basic principles to the private practice of medicine, both as to cost and quality, by some physicians, and the apparent desirability of some form of control for both. And,

5. The basic recognition that one cannot succeed in preserving anything by destroying that which he seeks to protect. Insofar as medicine is concerned, one cannot unencumber the medical profession from regulation by the introductions of new controls. And,

6. A fear that a strong hand by medicine on these basic issues may provoke even wider applications of government control of medical care through new legislation.

There are a number of ancillary issues which relate to these conflicts. These include: fees and fee schedules, vendor versus recipient payment for medical services, the full service insurance concept versus indemnity insurance, assignment and dual signature checks, Foundations, the value of the Individual Responsibility Plan itself, the proper role of C.M.A. in consultation with state agencies, to truly represent the best interests of both its own members and the public (i.e. can C.M.A. recommend a fee schedule to state or can C.M.A. advise as to what level of fees it believes will be acceptable, recognizing that the state will interpret such advice as an endorsement?), and the provision of quality care for indigent patients.

To resolve these apparent conflicts, we must evolve a positive program based upon our statement of principles which will guarantee the highest quality of medical care to all of the public for the lowest possible cost. If our statement of principle is valid, a true expression of natural moral law, a proper application to each of these apparent conflicts will be easily possible and that program will succeed. If this statement of principle is incorrect, these conflicts will not be resolved; but if the principle is correct and we attempt to ignore or compromise its tenets, our entire program cannot hope to succeed. Moreover, the public will recognize quite readily those areas where we have ignored principle for our own expediency and will abandon us.

TESTIMONY, HEARINGS AND DISCUSSION

Service Insurance and Foundations:

In testimony heard by this Committee, it became quite apparent that many patients desire service insurance coverage and a significant number of physicians do provide what they consider to be high quality medical care under service insurance contracts for large segments of the population. Likewise, through several Foundations, this approach has been partially successful in controlling both quality and costs, but depends upon the caliber of leadership available, lacks sufficient strength for real quality control, and has the potential of abusive power if the control happens to be centered in the hands of the wrong few. Also, some members of the Foundations themselves believe that it is probable that full service coverage is best applied only to the indigent patient. Each patient, whenever possible, must be responsible for payment of some part of his regular medical fees if abuses of over-utilization are to be avoided and if lack of responsibility is not to interfere with the natural process of selection of the free market. This can be accomplished if Foundation policies follow the format of "Components of an Adequate Health Insurance Program" accepted by the House of Delegates in 1962.

With proper organization and proper restriction of power in their governing rules, the formation of voluntary societies such as this would appear to permit specific groups of doctors to set standards of both quality and costs which they will offer to the public, and in which each member accepts certain self-imposed rules, designed to guarantee the quality of services available. Any physician is free to remain outside or withdraw from the association, should its operation at any time interfere with proper care of his patients. Also, such voluntary associations must be organized in such fashion that no element of coercion can be applied to nonmember physicians.

Vendor versus recipient payments:

The vendor payment concept has been applied to some private insurance and to C.P.S., but most particularly to state welfare programs. *This has derived principally from increasing Federal involvement in the field of medical care.* Although testimony from experts in social science and social welfare programs indicated that some welfare recipients may lack the prudence necessary for proper management of their finances and may lack a sense of personal responsibility, it is well recognized that continuation of the vendor payment concept for the indigent patient (plus the extension of this concept into other segments of the population yet to come) encourages irresponsibility and conflicts with the stated objectives of the welfare program to restore its recipients to the status of responsible self-supporting persons in society as soon as possible. In addition, while the current practice of welfare and governmental agencies is to provide medical services directly rather than to provide money for the recipient to obtain these services for himself, these experts also testified that this is in direct conflict with what is today considered *good* social work theory. It is the only area in which direct provision of services is currently employed, and it represents a rejection of past experience in welfare programs (for food, housing, and other services), in which it has been found that direct provision of goods and services leads to: (1) decreased quality, (2) increased cost, (3) loss of incentive and responsibility, and (4) decreased opportunity for the recipient to ever improve himself.

Additional testimony by some welfare administrators themselves indicated quite strongly that the lack of patient responsibility engendered by current welfare department practices tends to expand the degree of irresponsibility and leads to increasing individual abuses which they find impossible to control.

The major physician support for the vendor concept seems to be the fear on the part of the individual doctor that he may actually lose some fees from an admittedly small, but definite number of irresponsible people who, being given money for medical services, would use these funds for other purposes.

It is, therefore, the conclusion of this member of your Committee that direct vendor payment is undesirable for any patient, welfare recipient or not. At the present time, because of the manner in which current Federal statutes are written, it may be impossible to change this mechanism immediately. However, unless doctors themselves are willing to accept their own responsibility to accomplish this, it will never be changed. The individual physician must be willing to hazard a small loss of income that might initially occur in order to gain the freedom and restoration of responsibility that can only be obtained by requiring the welfare recipient to reassume some responsibility for himself.

In the end, however, we must accept the basic fact that if we are to maintain a free society, C.M.A. can endorse neither the vendor nor recipient concept, but rather must recognize the freedom of each physician to make his individual choice. However, it *is* the responsibility of the C.M.A. to point out to its members the hazards of extension of the vendor concept insofar as our freedom and the quality of medical care are concerned.

Fees and fee schedules:

An additional problem related to the welfare recipient is the level of fees that welfare departments choose to pay for medical services. This, in turn, is related to a serious dilemma confronting every physician when the government enters the field of medical services. The doctor recognizes the undesirability of government interference in medical care. At the same time, he sees a need to care for a group of unfortunate people who are unable to provide for their own needs. These people are called "indigent." The state has assumed responsibility to provide them with medical care and now wishes to *buy* the doctor's services.

The position of the state in the matter is: the welfare department analyzes the basic needs of the welfare recipient for food, housing, clothing, etc. A budget is prepared and money provided for these needs. If this budget is properly drawn, the indigent has no money remaining to pay for unpredictable exigencies such as medical care. They, therefore, conclude that the agency must buy these services directly, and cannot permit the use of funds available for "partial indemnity" since the indigent should not have other resources. The welfare department officials then further state that it is their responsibility to spend taxpayers' funds prudently and that they should obtain these services for the least cost they can arrange—no matter how they do this.

In arriving at its present fee schedule (or conversion factor), the Welfare Department asked the C.M.A. and after considerable pressure obtained an "unofficial opinion" that a given level of fees would probably be acceptable to at least 50 per cent of the physicians in the State of California. The Welfare Department then adopted 80 per cent of this fee as its fee schedule. Welfare officials also quite frankly state that since doctors all claim that every patient receives the best quality of care, regardless of the size of remuneration involved, they can judge the adequacy of their fee schedule depending upon physician acceptance. That is to say, so long as doctors provide services for these fees, the agency will feel perfectly justified in assuming that the fee it pays buys the services it has contracted for; nor do they plan to negotiate for a change of these fees as long as they are acceptable (i.e. accepted).

The entire problem then poses several questions. The first of these is the indigent himself; the second, how quality services for indigents can best be provided; third, in what fashion the state can subsidize the indigent most effectively; fourth, how should fees for services be best determined; and fifth, has the C.M.A. a responsibility to either the state, the C.M.A. members, or the public to advise the state as to the adequacy of fee schedules.

The question of indigency in state welfare programs becomes a matter in the end of legal definition. It is quite obvious that the medical profession itself has no power to influence the manner in which this definition will be made. It is also obvious that whenever it chooses, the state may expand the program of "social welfare" to larger segments of the population by simply revising the legal definition of indigent. This in itself is a serious situation. However, there is an additional problem, namely: who are the people presently included under the term indigent. We must recognize that there are several categories of "indigent" people. There are, first of all, those who for some reason beyond their control have never and may never be able to provide for their own needs. These have always been with us and will be with us in the future. Fortunately, they are small in number. There are, secondly, a group of people who have in the past taken care of their own needs, but who at present find this impossible. They are anxious to provide for themselves and will if someone will show them how this can be done and will give them just that amount of assistance that they need to be restored to the status of self-sufficiency. This group, likewise, is at present a relatively small number, but it is likely to expand because of a third group of so-called indigent people. This third group are those individuals who are irresponsible and who, although perfectly capable of providing for themselves, are unwilling to do so and live as parasites on society. These people are not now responsible, have never been responsible, and will never be responsible as long as there is no penalty for irresponsibility and no premium for self-endeavor. In any society if serious penalty be removed from a lack of personal enterprise, a certain number of people will attempt to live at immediately above that level of subsistence below which society will not allow them to sink. This group, obviously capable of supporting themselves but unwilling to do so and apparently surviving without serious penalty, will then influence that next group of society who manage to exist at the same or only slightly better level, but through the efforts of their own labor. They too, will then lose whatever incentive they may have had to provide for themselves and will join the ranks of the irresponsible. This philosophy—why should I work if you don't—will expand slowly but steadily in ever increasing circles, and since this is a geometric rather than a linear expansion, will ultimately accelerate to include exceedingly large numbers of people who will, in fact, have been led to total dependency through no real fault of their own. It is imperative that we recognize this hazard of the welfare state philosophy and recognize the hazard of its application in the area of provision of medical services without the need for individual responsibility.

Under these circumstances then, how *do* we care for the truly indigent patient? And, how *do* we provide assistance for those responsible people who would like to help themselves but who temporarily need some support? The manner in which these ends can be properly accomplished is through the mechanism of *insurance and personal charity.*

Consider the second of these mechanisms first. Under the present system of state medical aid to welfare recipients, if quality medical service is obtained, much of it is through personal physician charity. A physician who provides medical care under a state welfare program can only do so under one of four circumstances:

1. Either the fee the state pays is adequate and he provides quality service for that fee, or
2. He provides inferior quality for this fee, if it is indeed inadequate, or
3. He subsidizes this patient out of his own personal charity, or
4. He obtains larger sums of money by subterfuge and fraud.

To state otherwise is to be either naive or untruthful and all that we accomplish by maintaining this myth that anyone can *BUY* quality service for less than quality cost, is to encourage the expansion of this concept to include larger groups of people, propagate immorality, and lead to a general deterioration of quality of medical care.

The less fortunate member of our society dislikes to accept charity; however, we cannot change this concept or else we have embarked upon the road to increased irresponsibility described earlier. It is far better that we simply state the facts as they are, namely: that we recognize that there are different categories of indigency, that the truly indigent deserves our care, concern, and charity; that no one works well except for profit; that personal charity produces a recognizable and tangible profit, and that when the physician accepts his proper role in providing that charity for the truly indigent individual, society has always voluntarily provided the additional ancillary services through similar charitable means. For example, a large percentage of open heart surgery is now being done under these circumstances. Many large voluntary clinics exist for this reason, as do the Poliomyelitis Foundation, the Heart Association, and the Tuberculosis and Health Association, etc., etc. If, however, the federal or state agency interferes in this mechanism, two things happen. The group of irresponsible people, who now appear to need subsidy, expands, meaning that the physician must now provide charity without a reason to do so (and this need increases progressively) and the charitable response of the community to provide the necessary additional services of hospitalization, physical therapy, rehabilitation, treatment and diagnostic facilities disappears.

If then the state should choose to provide subsidy for medical services for some segment of the indigent population, it can best do so in such fashion that if the indigent individual is responsible, he can find his own services in the market, and when necessary can ask for and receive openly the charity of the physician he chooses; and the physician can give of his time and services with the realization that his charitable effort will be recognized.

Our advice to state agencies and legislators, therefore, should be that they cannot obtain quality medical care for a predictable cost by legislation of services on a vendor basis, but that they can provide for quality service for indigents and near-indigents if they will allow them to purchase their own health insurance. If necessary, all or part of the premium may be subsidized. This insurance policy should also conform to the "Components of an Adequate Health Insurance Program," and the individual should then be allowed to use this insurance to seek his own services in the open market. The responsible physician will accept this insurance as a full service policy for the truly indigent person, *but* the patient himself must be educated to enter into a firm prior understanding with his doctor as to what services he will obtain and for what cost. A prudent person will not contract debts he cannot hope to satisfy; the irresponsible person will and will incur the hazard of potential penalty for his imprudence. The responsible person will have his dignity restored and his incentive to improve renewed; and the irresponsible person will be stimulated to assume the task of providing for his own future welfare.

From all considerations, i.e. actual cost, control of usage, administration, administrative expense, competition to provide the lowest unit cost per unit of service, preservation of quality by the realistic interrelation of demand versus cost in the free market, the tendency of welfare departments to equate indigent aid with categorical aid, and now the inclusion of wider areas of categorical aid in the same program (e.g. aid to the elderly, to the disabled, rehabilitation programs, aid to the near-needy, etc.), plus the available data in the files of insurance companies which render actuarial cost predictability possible (thus resolving at least one dilemma of the state budget department), plus the preservation of the private insurance concept which is vital to the survival of the private practice of medicine—from all these considerations—it would appear that this approach, namely the insurance concept, is:

1. The most practical approach from the standpoint of the state if its goal is truly to obtain quality care at a predictable cost and at the lowest cost possible without coercion, and is

2. An approach that private practitioners of medicine can logically, enthusiastically, and morally support.

There was considerable discussion among the members of this Committee to the effect that fees for indigent patients should be set in some way different from fees for nonindigent individuals; that, therefore, a fixed fee schedule is necessary; that C.M.A. should advise the state as to the proper level of these fees and that this should be at the "going rate." This is contrary to two important principles. First, the sociologists and social welfare workers state that good social welfare theory indicates that indigent people if they are to be rehabilitated to a proper position in society must be treated exactly as all other members of society and must be subjected to the same stresses. Second, the fees for any service for all individuals must be determined in precisely the same fashion, otherwise there will be an immediate divergence between the quality of service dispensed and the cost of the service itself.

The cost of any commodity or service can best be determined in the free market, and it is also in this fashion that the highest quality of medical services can be obtained for the least possible cost. Artificially determined fee schedules provoke one of two effects. A maximum fee schedule (i.e. a schedule above which fees may not rise) produces a shortage of quality medical care. All medical fees will rise to meet this maximum. If, in an attempt to set the fixed fee at the "going rate," one assumes that this "going rate" is an average of all the fees charged for a given service, or the median fee, or the fee charged by the majority of physicians, this none-the-less represents something greater than the least fee and less than the greatest. The practitioner who charges the smallest fee, therefore, will raise his charge to match that which is considered the "going rate," no matter at what level it may have been set. This will not change the quality of service provided, but instead it will provide a maximum fee schedule and a subsidy for the least qualified physician in the community. In time, since the laws of supply and demand operate in a medical community just as they do in any other community, the "average fee" or the so-called "going rate" will also rise, and we will have accomplished nothing. Fees and the quality of service which they can command will be precisely where they started from. A minimum fee schedule, on the other hand, will produce a surplus of mediocre medical care. Any effort to raise a minimum fee schedule will produce a surplus of medical services available at a quality value just immediately above the level that this minimum fee schedule will buy. These economic principles are inexorable. It may be that one can temporarily at least *appear* to thwart the principles of action of the market and for a short time may have an apparent gain in a few dollars. However, this is an effect, as Frederic Bastiat pointed out over one hundred years ago, of that which is seen; that which is not seen until too late is the gradual deterioration of quality medical care and gradual regimentation and control of the medical profession under systems of fixed fee schedules, which will ultimately lead to the destruction of the entire system of free enterprise and freedom in the practice of medicine.

The manner then in which fees can be properly related to the quality of care dispensed is to allow them to be determined by the laws of competition in the free market. Interestingly enough, in medicine as well as in any other commodity or service, all people willing to make the effort *can* obtain the highest available quality of medical care for the least possible price. This applies to the indigent or welfare recipient just as it applies to the average citizen.

In medicine, it is true, there are several peculiar problems that relate to the provision of quality care for a given fee. The most compelling of these difficulties is that in order for an individual to obtain high quality service at a proper cost, it is necessary that he have adequate information to make a critical judgment of value. In this area the medical profession has a distinct responsibility, because at the present time only the medical profession itself is capable of defining and identifying quality medical care. This is now partially accomplished in a variety of medical review committees. This process can be expanded in voluntary associations, in which doctors can pledge themselves to provide a given standard of medical service for fees that can be readily recognized as equitable. These medical associations or societies can determine that they will stand for quality care. They can identify the standards by which they measure quality, should have a continuing review of the practices of their members, and provide for automatic exclusion of any physician who cannot adhere to these standards. Conversely, a physician who does not choose to adopt such standards need not join and if having joined, cannot live by them, need not remain a member. It is to be hoped that our present medical associations can find the moral caliber to recognize these principles and address themselves to serious study of the details of accomplishing these ends, so that we may provide the public with an adequate measure of the value they can expect to receive.

Fees, likewise, can present a serious problem from the standpoint of determining whether or not the fee is proper for a given service. However, the public has within its own power the capacity to make this determination. To do so, each patient must enter into a firm contract with his physician for the fee that will be charged and the service to be provided. This is no more than realistic in that one does not contract for any other commodity or service without first inquiring as to its cost, quality, or scope, and arriving at a contract agreeable to both parties. Simple inquiry then among others in the community will readily identify what the "going rate" should be.

Moreover, we must recognize that different groups of individuals desire different levels of quality of medical service and will seek different kinds of care at different fees. It should be our objective to provide an atmosphere in which this can occur most readily, through free competition, which will in turn produce the maximum quality possible at any level of cost.

This in very brief and skeleton outline is the manner in which fees and quality of service can best be determined for all patients, welfare recipients and nonwelfare recipients alike. Since the major concern of the C.M.A. must be that its members provide the highest possible quality medical care for all patients that they choose to accept, C.M.A., then, has the responsibility—indeed, the obligation—in consultation with state agencies to identify that manner in which quality medical services can be obtained for any medical program under discussion and to state openly and unequivocally that C.M.A. cannot endorse for its members any program in which the quality of medical care may be compromised. If we do not make this point clear, this assembly may just as well disband except as it may desire to exist for the purpose of collective bargaining. One of our members has stated this well: "A medical society becomes a party to socialization and ultimate enslavement of the medical profession whether it be by 'approval in principle,' 'recommending participation,' 'participating in fee schedule discussions,' or simply by offering the plan with its 'moral approval for any of its members who wish to participate,' " and further that "to abdicate ideology for expediency, to exchange principles for dollars, makes our future objections to the extension of socialized medicine indefensible for government and public alike."

The question of participation:

There has been raised the question of whether or not C.M.A. can take a position of nonparticipation in inadequate medical care programs. Fortunately, we may say that total nonparticipation in a truly free society accomplishes nothing. However, the experience of physicians in other countries faced with this same challenge should provoke serious thought for our future action. In each instance, it has been necessary for doctors ultimately to take a stand at some point beyond which they could not further surrender their principles. We have the opportunity to make this stand today before we surrender *any* of these principles. We can take a position of nonacceptance of state control of medical practice at a time when the vast majority of the public will support us since they can see the threat to the quality of their own medical care. It is perfectly within our rights to provide medical services for any group of individuals out of our own charitable enterprise and refuse to accept the controls and regimentation of any program of socialization, state aid, federalization, or national health service.

But then it may be said, "If the state is willing to subsidize the indigent patient and provide a part of the fee that the physician would ordinarily receive for his services, is it not practical and realistic to accept this fee and thereby reduce the amount of charity that may be required." While attractive, this again presents only that which can immediately be seen, namely the apparent decrease in loss sustained by the individual physician in this case. What is not seen is the expansion of the group of irresponsible "indigent" individuals. He will subsequently be expected to provide for them in a similar fashion. By their very volume they will *increase* the amount of charity that it will be necessary for him to provide unless he proposes to dispense an inferior quality of care to these patients or intends by subterfuge to obtain a greater recompense for his service. And what also is unseen is *the decline of quality care that he is capable of providing for all of his patients*, both indigent and nonindigent alike. His resources and energies can only be expended to certain definable limits. This can only be compared to the analgesic which dulls the pain and allows the individual to eat, sleep and work, removing from him the apparent necessity of consulting a physician, but masks the cancer in his stomach which is slowly expanding to invade the liver, and will soon produce even greater distress, and ultimately his death.

When we are faced with the apparent desire of the Welfare Department and its officials to arbitrarily pose controls and arbitrarily set values upon our services for any group of patients, we must stand on the principle that we will participate in programs of medical care under which we can provide the highest quality service of all patients, but are prepared to offer these services without remuneration and not to accept the controls or fees of any program in which these standards are not preserved. And we must make this stand today when the number of individuals involved is small, for the intrusion of the state into the private practice of medicine is growing almost visibly. It will soon be too late.

There are those who will say, "We cannot do this. It will provoke the state into even more stringent legislation." For whom? For the remainder of our patients? They will not tolerate it. They will have no problem recognizing the principles upon which we have made our decision and they will support us.

For whom then? The welfare recipient? It hardly seems logical that the state would be impelled to legislate new regulations less acceptable to a profession whose concurrence it must have if its program is to succeed; nor does it seem likely that such regulations would compel a physician to abandon quality care of his patients for practice under a program of even greater control than that which he has already refused to accept. No, this spectre is like all ghosts, frightening to contemplate but without substance and should hold no terrors for men of courage.

The Individual Responsibility Plan:

Briefly, the Individual Responsibility Plan states the basic principles of the individual doctor-patient relationship. The physician is responsible to his patient to provide the highest quality of medical care available to him for an equitable fee. It is the responsibility of the patient himself to see that his just debts are paid. It is the responsibility of both to arrive at a satisfactory contract between them concerning the services to be rendered and the fee to be charged. In addition, when a physician accepts a patient for medical care, he assumes the additional responsibility to modify his fees should circumstances warrant it. Lastly, the physician assumes the responsibility to provide his patients with sufficient information as to diagnosis, treatment, and disability to allow the patient to recover whatever money he may be entitled to from contracts with insurance carriers or other agencies. Beyond this point, between the physician and his patient, there are no other responsibilities. Nor is there a responsibility between the physician and any third party, except the obvious moral obligation of all physicians not to enter, abet, or cooperate in fraud against any third party.

This plan appears to have the advantage of presenting a practical and visible application of the principles of free enterprise in the practice of medicine. It has the additional advantage that it removes the physician from a position between his patients and third parties and removes third parties from between the physician and patient. It also is a strong beginning toward the restoration of individual responsibility to all members of the community. The responsible person will see to it that he does not contract debts that he realistically cannot be expected to satisfy and when pressed by difficult financial circumstances will make satisfactory arrangements with his physician in advance of contracting for his services. The responsible individual will act in a prudent fashion to provide for potential future needs through the purchase of health insurance; and will make every effort, himself, to see to it that the sums provided by his insuring agency (or any other agency that may have assumed responsibility for his care) will be sufficient for him to purchase adequate medical care. This is the proper responsibility of the patient and removes the physician from the unnatural and undesirable position of having to make these pleas himself.

It is also of interest that some officials of the welfare agencies stated that the principles involved in the Individual Responsibility Plan offer distinct advantages towards restoring some responsibility to the welfare recipient.

It would appear, therefore, that the C.M.A. should acknowledge the validity of the principles of the Individual Responsibility Plan, should recognize it as a potentially valuable and practical mechanism whereby groups of individual physicians may implement the principles of free enterprise in the private practice of medicine and restore responsibility to its members and their patients, should encourage those physicians now practicing under the Individual Responsibility Plan to continue with their efforts and to report their experiences to the C.M.A. and should advise other groups of physicians seeking practical means to implement the objectives and the principles described in this report that this plan warrants their careful study.

For the Future:

The House of Delegates may acknowledge the principles of free enterprise described in this report, but then may rightly inquire as to how this can be applied in a practical fashion in the practice of medicine in this state. This is entirely proper in that one simply cannot exist in a vacuum and we must be prepared to present a positive program to implement these principles. It is not possible within the limits of this report to examine all of the multiple and complex ramifications of such a program in detail. However, if this House of Delegates and the physicians of this state are willing to accept the moral issues involved and make the basic distinctions necessary, we can then apply ourselves to the task of resolving the details of such a program.

Part of this program must include the development of sound comprehensive health care insurance. This is a premise to which the American Medical Profession has given its unreserved endorsement in the past. However, at present, two obstacles impede the further progress of private health care insurance. These are the presence of inadequate health insurance policies and the abuse of insurance by some physicians and patients.

The inadequate health insurance policy is a particularly insidious liability to society in that a patient may believe that he has prudently provided for his future health care needs, but, when faced with serious illness, may find that his insurance policy in no way protects him from the real losses he may incur. In order to correct this, the public, therefore, must be informed as to proper standards of adequate health insurance. The C.M.A. has already taken the first step necessary to provide the public with this information by adopting the "Components of an Adequate Health Insurance Program" in the 1962 House of Delegates. The contents of this document, including the "Ground Rules," should be widely disseminated among the public together with information as to the probable current costs of hospital care. Thus informed, the public will take care that the insurance policies it purchases will provide for real protection.

Beyond this, in order that the insurance carrier be able to write actuarily sound insurance, it is necessary that the medical profession help protect the insurance industry from fraud. This is in part accomplished now in our review committees. However, further education is necessary to encourage the greater use of prior contracts with regard to medical fees, and we must be willing to identify and assist in the prosecution of fraud whenever it is encountered in the field of medical services, whether perpetrated by physicians, patients, or both.

I am not so naive as to believe that a resolution to all of our problems will appear in one day or week or month, but, if we address ourselves now to the application of the principles described in this report, in a very few years such sound programs can be developed that the appeal of the socialists to regiment and control the practice of medicine will receive support only from other socialists, and we, as a medical profession, will be able to direct ourselves to the single problem of resolving the health care needs of our patients in an atmosphere of complete confidence and freedom.

CONCLUSIONS

The basic charge to this Committee was to resolve the question of whether the C.M.A. should pursue a policy of collective bargaining for its members or should endorse the principles of free enterprise in the practice of medicine as exemplified in the principles of individual responsibility. In considering this, we have stated that the only principle of action upon which medicine can stand and by which we can maintain a free profession must be that we will provide the highest quality of medical care for all patients. Our additional objectives are that the policies we adopt will thwart the socialization of medicine and will allow us to promise the people of this state that we will provide the best possible medical care for every individual for a cost that they can afford.

In this report, I believe that there has been developed adequate information to indicate that we cannot accomplish these objectives by adopting that which is expedient when it leads to sacrifice of control and thereby deterioration of quality; nor by compromise of principles; nor by assisting the state in the construction of fee schedules; nor by the legislation of new regulations and new laws; but that rather we *can* accomplish these objectives by strict application of the principles of free enterprise to the practice of medicine, through the mechanisms of voluntary associations dedicated to provision of high quality care and through the development of sound and comprehensive private health care insurance programs. In this, we will assume the responsibility to protect these associations and the private insurance industry, and, when necessary, will protect the integrity of free enterprise by the application of our own personal charity.

To this member of your Committee, then, there is but one choice, namely that the C.M.A. adopt the policy of individual responsibility and personal enterprise in the free practice of medicine. This member humbly admits that many of the details of how this shall be accomplished remain to be fully developed. However, I submit that the basic distinction that we must make is whether or not we recognize, accept, and endorse the basic moral principle that our only concern can be the preservation of the quality of medical practice through individual responsibility and that on this we must stand without compromise.

Fees then should be determined by the individual physician and his patient in the free market; government should determine the fee it will pay and how it should be paid in the same fashion; the C.M.A. has no right to accept any fee schedule set by the state since C.M.A. does not have that right itself; the problems of vendor and recipient payment, assignments, dual signature checks, Foundations, insurance forms, and the Individual Responsibility Plan itself are indeed the individual responsibilities of each physician and his patient. The responsibility of the C.M.A. to its members, to the state, and to the public is to protect the quality of medical care that its members dispense. In all of its deliberations and consultations with the state or any other agency, the C.M.A. must limit its advice to this area alone, but, in addition, C.M.A. must take the leadership to stimulate its member physicians to reappraise their current practices and to seek out those practical solutions that are essential if we are to present our patients a pledge that we can deliver to all people the highest quality of medical care for the cost that they can afford.

JOSEPH F. BOYLE, M.D.

Resolutions Submitted from Ad Hoc Committee No. 2

Resolutions were submitted to the 1963 House of Delegates by Ad Hoc Committee No. 2 and by the author of the minority report. Those on which the House took positive action are printed herewith.

STATE MEDICAL CARE PROGRAMS

Resolution No. 14 1963

Author: Ad Hoc Committee No. 2

Resolved: That the California Medical Association reaffirm its belief that all programs including government subsidized medical care programs should include (a) the fee-for-service principle and (b) the free choice of physician principle; and be it further

Resolved: That C.M.A. accept the legal definition of indigency as defined by society, but continue to press for realistic legislation in this concept and encourage its members as individual citizens to interest themselves in such legislation; and be it further

Resolved: That C.M.A. should recommend that fees paid by government for medical services should be at the usual and customary amounts paid by the public generally; and be it further

Resolved: That C.M.A., through its appropriate committees, continue to study methods by which this usual and customary rate can be defined and identified, including regional variations where substantiated; and be it further

Resolved: That C.M.A. recognize the present legal necessity for "vendor" payment for medical care rendered to certain welfare patients, but continue to urge the development of programs based on the purchase of health insurance, with the possibility of recipient payment, for all classes of citizens for which government undertakes to provide medical care, in order to abolish the socially undesirable differentiation between indigent and nonindigent persons; and be it further

Resolved: That the function of C.M.A., in government programs, shall be to serve as consultant and advisor—not as negotiator or bargainer: and be it further

Resolved: That C.M.A. limit its actions in state fee schedules to recommendations as to levels and relative values of fees which it believes will secure widespread participation and scope of high quality medical care for wards of government; and be it further

Resolved: That C.M.A. continue to maintain an active working liaison with all agencies of local, state or federal government which provide medical services, as long as an attitude prevails of seeking (a) solutions for the common good of all (including doctors) and (b) sound medical care, with dignity, for the indigent and other government wards; and be it further

Resolved: That the Council, through its appropriate committees, continue to explore and develop opportunities for recipient payment in government and insured plans, to include opportunity for assignment of benefits, or to include the opportunity for payment by joint checks, at the option of the attending physician; and be it further

Resolved: That C.M.A. continue to use all possible methods to stimulate provision of high quality medical care to all patients regardless of source or level of fees.

ACTION: Adopted by House as amended (above).

* * *

VOLUNTARY HEALTH INSURANCE

Resolution No. 15 1963

Author: Ad Hoc Committee No. 2

Resolved: That C.M.A. continue its support and encouragement of all types of experimentation in voluntary health insurance, whether "service," "indemnity" or a combination thereof, which can assist people to meet the cost of high quality medical care.

ACTION: Adopted by House.

* * *

PHYSICIAN PARTICIPATION IN MEDICAL CARE PROGRAMS

Resolution No. 16 1963

Author: Ad Hoc Committee No. 2

Resolved: That C.M.A. reassure each member of his complete freedom to participate or to refrain from participation, in any medical care program as he individually chooses; and be it further

Resolved: That C.M.A. exert no pressure to stimulate his participation above and beyond that which is dictated by his professional conscience.

ACTION: Adopted by House as amended (above).

* * *

USUAL FEE INDEMNITY PLAN

Resolution No. 17 1963

Author: Ad Hoc Committee No. 2

Resolved: That the Council through its appropriate committees continue efforts to stimulate development of usual fee indemnity programs in California; and be it further

Resolved: That efforts be continued to develop composite fee lists of usual and customary fees, which bind no individual doctor, but which can guide any insuring or governmental agency.

ACTION: Referred to Commission on Medical Services.

* * *

INDIVIDUAL RESPONSIBILITY

Resolution No. 18 1963

Author: Ad Hoc Committee No. 2

Resolved: That C.M.A. is in agreement with the concept and principle of individual responsibility; and be it further

Resolved: That C.M.A. recognize the value of this concept in preventing control by third parties of the practice of medicine; and be it further

Resolved: That C.M.A. encourage its member societies to gain further experience with the applied concept of individual responsibility.

ACTION: Adopted by House.

INDIVIDUAL RESPONSIBILITY

Resolution No. 65 1963

Author: Joseph F. Boyle

Representing: Minority Report of Ad Hoc Committee No. 2

Resolved: That the C.M.A. acknowledges and endorses the principle of Individual Responsibility as the only available basis for the continuation of free enterprise in the private practice of medicine—with the understanding that individual responsibility means:

A. For the physicians:

1. The responsibility to provide the highest quality medical service for each and every patient he accepts regardless of the source and amount of his remuneration;

2. The responsibility and freedom to enter into that form of financial arrangement for remuneration for his services that he himself believes best satisfies the needs of his patient and which, at the same time, allows him to provide the highest quality medical care for a fee that is equitable and which his patient can afford;

3. The responsibility to provide for the care of indigent patients out of his own personal charity should participation in a substandard program of health care interfere with the provision of high quality medical care;

4. The responsibility not to accept regimentation or control nor to aid and abet any substandard care program simply to receive payment for his services

and prevent the loss of some dollars of charity he might otherwise need to provide out of his own efforts;

5. The responsibility and need to seek new and better means of establishing and maintaining high standards of medical care; and

6. The responsibility to help prevent, identify, and prosecute fraud wherever this may be encountered in the area of provision of medical services.

B. For the patient:

1. The responsibility to enter into firm contracts or understandings with the physician as to the type and cost of medical service he can expect to obtain;

2. The responsibility to see that his just debts are paid;

3. The responsibility to prudently provide for potential future health care services by seeking out and obtaining for himself adequate health insurance;

4. The responsibility should he become truly unable to provide financially for his own health needs to ask his physician for whatever assistance may be necessary to resolve this problem and to accept realistic solutions when they are offered to him.

C. For the C.M.A.:

1. The responsibility to state that it recognizes the rights of each individual physician to accept or reject any program for provision for medical services based upon his own and his patient's needs;

2. The responsibility to identify any health care program which does not permit the physician to provide a high standard of medical care and to so advise its members;

3. The responsibility to undertake a program of education for the public as to the value and characteristics of a realistic health insurance program;

4. The responsibility to seek out and assist in the prosecution of all instances of fraud wherever they may be encountered in the provision of medical services;

5. The responsibility to institute and stimulate new programs of education for the medical profession for the continuing protection of high quality medical services and to implement the precepts of the minority report (House of Delegates Ad Hoc Committee No. 2);

6. The responsibility to advise state agencies only as to how they may provide for quality care for those individuals whom they have designated as their wards; and

7. The responsibility to refrain from any statements, endorsements, advice, etc. as to the proper level of fees for medical services in this state.

D. For the welfare agencies:

The responsibility to seek out those solutions for provision of medical services which permit the welfare recipient as an individual to assume some responsibility for providing his own health care or to seek and accept charity, and to allow the individual to find his health care in the free market through some program of indemnification.

(At present, these latter provisions and responsibilities of the welfare agency would appear to be feasible only through the purchase of health insurance.)

ACTION: Referred to Council.

* * *

I.R.P. PROGRAM

Resolution No. 68 1963

Author: Joseph F. Boyle

Representing: Minority Report of Ad Hoc Committee No. 2

Resolved: That the C.M.A. acknowledges the validity of the principles of the Individual Responsibility Plan of the San Fernando Valley District of Los Angeles County; recognizes this plan as a potentially valuable and visible, practical application of the principles of free enterprise in the practice of medicine, encourages its members now using this plan to continue and to report their experiences to the C.M.A., and recommends that other groups of physicians seeking similar, practical mechanisms seriously study the provisions of this plan.

ACTION: Referred to Council.

regional postgraduate institute

Harvey's Wagon Wheel, LAKE TAHOE

June 27-29, 1963

PROGRAM—Gastroenterology and Therapeutics

THURSDAY AFTERNOON, JUNE 27

12:30 p.m.—Registration

Welcome: A. John Quinn, M.D.

1:30 p.m.—Introduction—Paul R. Sharick, M.D.

1:45 p.m.—**Cancer of the Alimentary Tract with Special Reference to Stomach, Colon and the Second Look**—Owen H. Wangensteen, M.D.

2:30 p.m.—Question and Answer Session. *Presiding:* Paul R. Sharick, M.D.

2:45 p.m.—**Disorders of Liver Function**—John V. Carbone, M.D.

3:30 p.m.—Question and Answer Session—Presiding: William Y. Fong, M.D.

3:45 p.m.—Intermission

4:00 p.m.—PANEL DISCUSSIONS (you may go to one of your choice):

A. **Gastric Cooling and Freezing**—Owen H. Wangensteen, M.D. *Presiding:* Paul R. Sharick, M.D.

Panel: George G. Snively, M.D.; Robert W. Weiss, M.D.; Norman J. Barnstein, M.D.

B. **Value of Biopsy and Newer Diagnostic Methods in G. I. Disease**—John V. Carbone, M.D. *Presiding:* William Y. Fong, M.D.

Panel: Seymour Bradus, M.D., Julita Fong, M.D., James T. Lukens, M.D.

FRIDAY MORNING, JUNE 28

Presiding: George L. Alexander, M.D.

9:00 a.m.—X-RAY CONFERENCE: **Diagnostic Hints in G. I. Disease**—Charles D. Noonan, M.D.

9:30 a.m.—**Trends in G. I. Surgery**—Owen H. Wangensteen, M.D.

10:15 a.m.—**Fluid Problems Associated with G. I. Disease**—Frank A. Gotch, M.D.

11:00 a.m.—Intermission

11:15 a.m.—PANEL DISCUSSIONS (you may go to one of your choice):

A. **The Diagnosis of the Acute Abdomen**—Owen H. Wangensteen, M.D., and Charles D. Noonan, M.D. *Presiding:* H. John Rush, M.D.

Panel: Joseph Cosentino, M.D., George Wernette, M.D.

B. **Use and Abuse of Parenteral Fluids**—Frank A. Gotch, M.D. *Presiding:* Robert B. Sudrann, M.D.

Panel: Frank J. Glassey, M.D., Quentin Bonser, M.D., Yukio Uyeno, M.D.

C. **Advances in the Treatment of Infantile Diarrhea**—Sidney J. Sussman, M.D. *Presiding:* Walton K. Brainerd, M.D.

Panel: Ernest J. Petrulio, M.D., Milton F. Parker, M.D., M. Jean LoGuercio, M.D.

12:30 p.m.—Question and Answer Session

12:45 p.m.—Luncheon

SACRAMENTO VALLEY COUNTIES

Presented cooperatively by Sacramento Valley Counties Medical Societies, University of California School of Medicine, San Francisco, and the California Medical Association Committee on Continuing Medical Education. A 14-hour course.

HOST: SACRAMENTO COUNTY MEDICAL SOCIETY

Regional Chairman: A. John Quinn, M.D., 2600 Capitol Avenue, Sacramento 16.

INSTITUTE FEE: $15.00. For additional information contact the Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 2.

All California Medical Association members and their families are cordially invited to attend

GUEST SPEAKER

Owen Wangensteen, M.D.

Professor and Chairman
Department of Surgery
University of Minnesota
Minneapolis, Minnesota

FRIDAY AFTERNOON, JUNE 28

Presiding: Donald S. Weaver, M.D.

2:00 p.m.—**Oral Lesions in Gastroenterology**—Kahn Uyeyama, M.D.

2:30 p.m.—**Inflammatory Diseases of the Bowel**—Henry D. Brainerd, M.D.

3:15 p.m.—**"Gas"**—Hugo C. Moeller, M.D.

4:00 p.m.—Intermission

4:15 p.m.—PANEL DISCUSSIONS (you may go to one of your choice):

A. **Use and Abuse of Antibiotics in Gastroenterology**—Henry D. Brainerd, M.D. *Presiding:* Philip J. Reilly, M.D.
Panel: Ernest J. Petrulio, M.D., J. Romelyn Warburton, M.D., James P. Mannion, M.D.

B. **Travelers Diarrhea**—Hugo C. Moeller, M.D. *Presiding:* B. J. Siebenthal, M.D.
Panel: Herbert W. Jenkins, M.D., Don Weaver, M.D., Sidney J. Sussman, M.D.

C. **Symptomatic Treatment and Its Place in Gastroenterology**—*Presiding:* Evan Perkins, M.D.
Panel: Kahn Uyeyama, M.D., Richard L. Johnson, M.D., J. A. Pearce, M.D., Arthur Huntley, M.D.

7:00-8:00 p.m.—No Host Social Hour

8:00 p.m.—Dinner and Entertainment

SATURDAY MORNING, JUNE 29

Presiding: Joel T. Janvier, M.D.

9:00 a.m.—**The Generalist Views the Stroke Victim**—Walter J. Treanor, M.D.

9:40 a.m.—**Newer Concepts and Practical Points in Diuretic Therapy**—Alan Goldfien, M.D.

10:30 a.m.—**Psychopharmacologic Drugs**—Bertram G. Katzung, M.D.

11:00 a.m.—Intermission

11:15 a.m.—PANEL DISCUSSIONS (you may go to one of your choice):

A. **Dangers of and Syndromes Related to Drug Therapy**—Bertram G. Katzung, M.D. *Presiding:* Herlan O. Loyd, M.D.
Panel: Richard R. Coyle, M.D., Mark Dentinger, M.D., Richard Reinertson, M.D.

B. **Use and Abuse of Progestational Drugs**—Alan Goldfien, M.D. *Presiding:* Vorris M. Reist, M.D.
Panel: Clarence Benson, M.D., Lloyd D. Bowles, M.D.

C. **Muscle Weakness: Discovery and Differentiation**—Walter J. Treanor, M.D. *Presiding:* Earl A. Trumble, M.D.
Panel: Eugene N. Smoley, M.D., Philip B. Ryan, M.D., H. Lynn Bush, M.D.

12:30 p.m.—Question and Answer Session. *Presiding:* William W. Tucker, M.D.

Luncheon

No. 19*

POISON

With today's advanced technology and constant appearance of new chemical products on the market, it becomes impossible for the physician to be knowledgeable about potential poisons and their treatment. When faced with a case of poisoning, time is of the essence in instituting proper treatment. The physician must also know what specific procedures or drugs are indicated. In the past this information has often not been available.

Every physician should be cognizant of the present availability of Poison Information Centers. There are eight of these in California (listed below) that should be filed for future reference purposes. The largest volume of requests for information is reportedly handled by the Los Angeles Children's Hospital Center and the Alameda-Contra Costa County Medical Association Center.

In the event of an emergency call involving poisoning, the physician should ask the patient or other responsible party to bring the container from which the poison was derived. The Poison Information Center can then be properly advised as to what toxic material is involved. Information from these centers is restricted to physicians for medical-legal reasons.

All Poison Information Centers offer twenty-four hour service through telephone communication. In the interest of patient welfare, for occurrence of occupational or other poisoning, your Committee on Occupational Health urges all members to file or post the following list for ready availability.

POISON INFORMATION CENTERS

1. Alameda-Contra Costa Medical Association
   OLympic 2-8171
   or
   Children's Hospital of East Bay, Oakland
   OLympic 4-5600
2. Fresno Community Hospital
   ADams 3-0911 (day)
   ADams 3-7547 (night)
3. Los Angeles—Children's Hospital
   NOrmandy 4-2121
4. Oakland—Children's Hospital of the East Bay
   OLympic 4-5600
   or
   Alameda-Contra Costa Medical Association
   OLympic 2-8171
5. Orange County General Hospital
   KE 8-2331
6. San Francisco—Central Emergency Hospital
   HEmlock 1-2800
7. San Francisco—Children's Hospital
   BAyview 1-1200
8. San Jose—Emergency First Aid Station
   CYpress 2-3141

Committee on Occupational Health
California Medical Association

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*This is the nineteenth of a series of articles prepared by the Committee on Occupational Health.

Lewis A. Alesen, M. D.

A COWARD DIES A THOUSAND DEATHS, a brave man dies but once.

Doctor Lewis A. Alesen died but once, but a little bit of each of a thousand of his friends died with him. Louie was intensely partisan in all his activities. He could brook no non-participant attitude when a question of right or wrong was involved. He was intensely loyal. You could differ with him in some opinions but you never lacked in admiration of his fine qualities.

Doctor Alesen was born in Illinois then moved to Colorado. He went to school there and later entered the University of Colorado, graduating in premedical preparation. He returned to Chicago and received his M.D. degree from the University of Illinois Medical School in 1921. He came to Los Angeles and took his internship and residency at the Los Angeles County General Hospital, with which he was associated all his years of practice. He became Chief of the Surgical Division and held this position at the time of his retirement because of ill health. His private practice was associated with the California Lutheran Hospital where he was a Senior Attending surgeon. He taught surgery at the College of Medical Evangelists for many years.

He early aligned himself with medical organizations. He became a vital part of them and worked constantly for the welfare of the people who were the patients served by his profession. An able speaker, a clear thinker, a well read philosopher, an accomplished debater, energetic beyond all belief, Doctor Alesen could convince almost any audience. He was most effective because of the sincerity with which he presented his subject. He was interested in civic affairs. He believed that every citizen owed his country a large "measure of devotion" and that he should pay that debt constantly to keep liberty alive.

LEWIS A. ALESEN

A list of honors that he attained is too long to be completely noted at this time. Some of them should be stated. He was equaled by few in the affection given him by his fellows. Successively he was Secretary-Treasurer, President and Trustee of the Los Angeles County Medical Association; Vice Speaker then Speaker of the House of Delegates and later President of the California Medical Association. He was a Delegate to the American Medical Association representing California. He was a Fellow of the American College of Surgeons; certified by the Board of General Surgery. He was Associate Professor of Surgery at the College of Medical Evangelists and Chief of Staff at the Los Angeles County General Hospital. He was a Senior Attending surgeon at the California Lutheran Hospital. As a Director of the Freedom Clubs of America, Doctor Alesen lectured extensively throughout the United States. He was dedicated to sustaining private enterprise and individual liberty under the Constitution of the United States. In this endeavor he was a close friend of Dean Manion, Dr. James Fifield, Jr., and many other men of quality.

For eight long years Louie knew his life was forfeit. He withstood with fortitude those efforts made by his beloved colleagues to prolong his life. These last years he gave entirely to his family, to writing and to promulgation of those principles he cherished so much. Eventually his activities ended. His influence will long exist and after all who knew him have gone to join him, the principles for which he labored will still remain. His labors, his skill, his intelligence and his integrity marked his stature as a man.

E. VINCENT ASKEY

In Memoriam

ALESEN, LEWIS A., Los Angeles. Died May 9, 1963, in Los Angeles, aged 66, of cancer. Graduate of the University of Illinois College of Medicine, Chicago, 1922. Licensed in California in 1922. Doctor Alesen was a member of the Los Angeles County Medical Association, and a member and past president of the California Medical Association.

✣

BAMES, HERBERT OTTO, Los Angeles. Died April 16, 1963, in Los Angeles, aged 77, of heart disease. Graduate of the College of Physicians and Surgeons, Medical Department, University of Southern California, Los Angeles, 1913. Licensed in California in 1913. Doctor Bames was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

BANCROFT, IRVING REED, Los Angeles. Died April 26, 1963, in Los Angeles, aged 90, of acute coronary insufficiency. Graduate of Harvard Medical School, Boston, Massachusetts, 1900. Licensed in California in 1906. Doctor Bancroft was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✣

BARRETTE, PIERCE COOK, San Jose. Died April 18, 1963, in San Jose, aged 61, of heart disease. Graduate of New York University College of Medicine, New York, 1927. Licensed in California in 1930. Doctor Barrette was a member of the Santa Clara County Medical Society.

✣

BELL, THOMAS FLOYD, Pebble Beach. Died April 22, 1963, in Monterey, aged 74, of adrenocortical failure. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1918. Licensed in California in 1918. Doctor Bell was a retired member of the Alameda-Contra Costa Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

BLOUNT, WILLIAM J., Long Beach. Died April 10, 1963, in Long Beach, aged 76, of heart disease. Graduate of the California College of Medicine, 1962. Licensed in California in 1962. Doctor Blount was a member of the Forty First Medical Society.

✣

CHERNEY, LEONID SERGIUS, San Francisco. Died April 23, 1963, in San Francisco, aged 55. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1934. Licensed in California in 1934. Doctor Cherney was a member of the San Francisco Medical Society.

✣

CHERRY, KATHRYN TEACH, Los Angeles. Died April 10, 1963, in Beverly Hills, aged 53. Graduate of Stanford University School of Medicine, Palo Alto-San Francisco, 1935. Licensed in California in 1935. Doctor Cherry was a member of the Los Angeles County Medical Association.

CHRISTMAN, ROBERT A., Whittier. Died April 5, 1963, in Pauma Valley, San Diego County, aged 53, of coronary thrombosis. Graduate of the Indiana University School of Medicine, Bloomington-Indianapolis, 1943. Licensed in California in 1945. Doctor Christman was a member of the Los Angeles County Medical Association.

✣

CONLEY, JAMES L., Los Angeles. Died April 12, 1963, in Los Angeles, aged 59. Graduate of the California College of Medicine, 1962. Licensed in California in 1962. Doctor Conley was a member of the Forty First Medical Society.

✣

COOK, JESSE D., Los Angeles. Died March 20, 1963, in Los Angeles, aged 83, of cerebral vascular accident. Graduate of Rush Medical College, Chicago, Illinois, 1913. Licensed in California in 1932. Doctor Cook was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

CUMMINGS, JESSE CARL (J. CARL), Riverside. Died April 4, 1963, in Riverside, aged 77. Graduate of the Chicago College of Medicine and Surgery, 1913. Licensed in California in 1914. Doctor Cummings was a member of the Riverside County Medical Association.

✣

FAIT, ROMAN VINCENT, La Jolla. Died April 13, 1963, in La Jolla, aged 54. Graduate of the University of Minnesota Medical School, Minneapolis, 1933. Licensed in California in 1950. Doctor Fait was a member of the San Diego County Medical Society.

✣

FRISCH, ADALBERT, Los Angeles. Died May 3, 1963, in Los Angeles, aged 70, of cancer of the lung. Graduate of Magyar Királyi Pázmány Petrus Tudományegyetem Orvasi Fakultasa, Budapest, Hungary, 1916. Licensed in California in 1921. Doctor Frisch was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

GESHELIN, HARRY ISRAEL, Los Angeles. Died March 18, 1963, in Los Angeles, aged 62, of coronary thrombosis. Graduate of McGill University Faculty of Medicine, Montreal, Quebec, Canada, 1923. Licensed in California in 1924. Doctor Geshelin was a member of the Los Angeles County Medical Association.

✣

GRUENBERG, FRIEDRICH, San Francisco. Died March 30, 1963, aged 59. Graduate of Medizinische Fakultät der Universität, Wein, Austria, 1932. Licensed in California in 1941. Doctor Gruenberg was a member of the San Francisco Medical Society.

✣

LEVINE, CLARA KEREKES, Hayward. Died in San Francisco, April 27, 1963, aged 36. Graduate of the University of Chicago School of Medicine, 1948. Licensed in California in

1949. Doctor Levine was a member of the Alameda-Contra Costa Medical Association.

◆

McCarthy, John Joseph, Bakersfield. Died in Bakersfield, April 19, 1963, aged 54, of heart disease. Graduate of the University of Nebraska College of Medicine, Omaha, 1933. Licensed in California in 1934. Doctor McCarthy was a member of the Kern County Medical Society.

◆

Molofsky, Leonard Carl, Oakland. Died April 30, 1963, in Oakland, aged 48, of disseminated carcinoma. Graduate of the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1938. Licensed in California in 1951. Doctor Molofsky was a member of the Alameda-Contra Costa Medical Association.

◆

Movius, Clarence McKinley, Los Angeles. Died April 21, 1963, in Los Angeles, aged 66. Graduate of St. Louis University School of Medicine, Missouri, 1925. Licensed in California in 1926. Doctor Movius was a member of the Los Angeles County Medical Association.

◆

Nagle, John Michael, San Francisco. Died April 26, 1963, in San Francisco, aged 61. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1934. Licensed in California in 1934. Doctor Nagle was a member of the San Francisco Medical Society.

◆

Oster, Winton B., San Diego. Killed in a skiing accident in Switzerland, May 7, 1963, aged 46. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1942. Licensed in California in 1942. Doctor Oster was a member of the San Diego County Medical Society.

◆

Reinle, George G., Piedmont. Died April 12, 1963, in Piedmont, aged 90, of malignant tumor of bone. Graduate of the College of Physicians and Surgeons of San Francisco, 1901. Licensed in California in 1901. Doctor Reinle was a member of the Alameda-Contra Costa Medical Association, a past president and a life member of the California Medical Association, and a member of the American Medical Association.

Rohow, Fred M., Long Beach. Died May 4, 1963, in Long Beach, aged 72, of melanocarcinoma. Graduate of the Chicago College of Medicine and Surgery, 1917. Licensed in California in 1946. Doctor Rohow was a member of the Los Angeles County Medical Association.

◆

Schagrin, Maud Sylberta, New York. Died April 15, 1963, in New York, aged 63, of coronary occlusion. Graduate of Woman's Medical College of Pennsylvania, Philadelphia, 1925. Licensed in California in 1949. Doctor Schagrin was a member of the Los Angeles County Medical Association.

◆

Shintani, Juro (Jay Juro), Los Angeles. Died April 1, 1963, aged 41, of heart disease. Graduate of Washington University School of Medicine, St. Louis, Missouri, 1948. Licensed in California in 1952. Doctor Shintani was a member of the Los Angeles County Medical Association.

◆

Stauch, George G., Sacramento. Died April 4, 1963, in Sacramento, aged 55. Graduate of the University of Kansas School of Medicine, Lawrence-Kansas City, 1933. Licensed in California in 1940. Doctor Stauch was a member of the Sacramento Society for Medical Improvement.

◆

Warner, George F., Orange. Died April 25, 1963, in Orange, aged 45, of metastatic carcinoma of the lung. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1942. Licensed in California in 1942. Doctor Warner was an associate member of the Orange County Medical Association.

◆

Weatherly, Howard Everett, Beverly Hills. Died April 23, 1963, in Beverly Hills, aged 52. Graduate of the State University of Iowa College of Medicine, Iowa City, 1934. Licensed in California in 1948. Doctor Weatherly was a member of the Los Angeles County Medical Association.

◆

Weil, Josef, Santa Monica. Died March 22, 1963, in Santa Monica, aged 54. Graduate of Universita Karlova Fakulta Lékárska, Praha, Czechoslovakia, 1935. Licensed in California in 1955. Doctor Weil was a member of the Los Angeles County Medical Association.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

Recent cases of meningococcal meningitis in military and civilian populations in California have led to renewed publicity of this disease.

The meningococcal meningitis is not infrequently encountered in military installations or in institutions in which large numbers of people congregate. Major epidemics of the disease occur at irregular intervals but cases are also reported sporadically every year without connection with an epidemic.

The annual incidence of meningococcal infections in California since 1950 has fluctuated from a low of 190 reported cases (in 1959) to a high of 463 cases (in 1953). Last year, 334 cases were reported. The death rate averages about 20 per cent.

During the first four months of this year, 140 cases were reported in the state, compared with 118 cases in 1962 and 89 cases in 1961. The increase in number has been without epidemic occurrence in the civilian population, the cases being scattered over many counties.

Two outbreaks in military installations have occurred, one at Fort Ord and the other at the San Diego Naval Training Center. The Fort Ord outbreak began in late 1962 and apparently has run its course. It has involved 11 persons. The San Diego outbreak is still in progress and so far since the first of the year 24 cases have occurred, with three deaths.

* * *

Since September of last year, the Health Department has issued 120 licenses for medical and non-medical use of radioactive materials.

The non-medical licenses cover an array of uses, including chemical milling, gauging device, industrial radiography, oil and gas well studies, tracer studies, radiation damage studies, light source, biological research, machining and x-ray targets.

* * *

In 1961, there were 911 instances of occupational disease attributed to pesticides and other agricultural chemicals, nearly 7 per cent less than in 1960. The decrease in the number of reports occurred in the agricultural industry; other industries showed a slight increase over 1960.

Employees of 35 agricultural aircraft operators accounted for 55 cases of occupational illness attributed to pesticides and other agricultural chemicals, a decrease of 45 per cent from 1960. Nearly 30 per cent of the 911 occupational disease reports attributed to pesticides and other chemicals implicated the organic phosphate pesticides. The next most frequently implicated were halogenated hydrocarbons, herbicides and fertilizers.

Over half of the reports were for skin conditions. Other cases involved systemic poisoning and respiratory tract disease. Nearly three quarters of the 268 reported cases of systemic poisonings were attributed to organic phosphate pesticides.

* * *

With the completion of the highly successful community oral poliomyelitis vaccine immunization programs sponsored by local medical societies, steps must now be taken by public health departments to assure the immunization of newcomers to our state and of the newborn.

It is recommended by the State Health Department that the live attenuated oral poliomyelitis vaccine be used to immunize people of all age groups throughout the year in conjunction with regular health department immunization programs.

To the extent that it is necessary to set priorities, emphasis should be placed on immunization of infants, beginning at the age of three months; a continuing effort should be made to immunize any preschool and school age children, and their parents, who were missed in the recent community programs. The benefits of the mass programs will be short-lived unless infants entering the population are immunized early in life.

LETTERS *to the Editor*

Kerr-Mills Administration in California

The Kerr-Mills Law was enacted to provide assistance to older people with reduced income and unusually large medical expenses. It was designed to help the medically indigent. A report recently released by the California Department of Social Welfare indicates that it is not being used for this purpose.

In 1962, $25,169,798.00 was spent on the program for hospital care in California. Of this, $22,430,051.00 was spent to pay the cost for patients in County Hospitals. $20,810,419.00 was spent for nursing home care. A spokesman for the Department of Social Welfare says the same proportion were patients transferred from County Hospitals, and therefore, the responsibility of the County. Of the total of $45,960,217.00, 89 per cent was spent to compensate county governments for the cost of caring for their indigents. These patients had paid nothing for their care. No additional care was given. No better service was provided. No patient was relieved of a financial problem. The cost of the care of the indigent was merely transferred from the County to the Federal Treasury. This is subsidizing indigence. This is not the function of the Kerr-Mills Law.

Patients are eligible for assistance under the Program, only after being in a hospital for one month. The Department of Social Welfare has the power to reduce this to three weeks. They have refused to do so, although requested by the California Medical Association, because of the claim that they did not have enough money. An elderly patient who spent his reserves on three weeks in a private hospital, and became medically indigent, received no help. This, while the Department of Social Welfare was transferring $40,952,134.00 to the County Treasuries. Only $17,860.00 was spent for out-patient care.

This is sabotage of a program designed to improve medical care available to the elderly. This is not providing medical care for the elderly who need it. This is deliberate misuse of Kerr-Mills Funds. Perhaps it is done this way because there are not many medical indigents among the elderly. If true, the Department of Social Welfare should say so. Perhaps this means that the claim for the great need among the elderly for assistance in meeting the cost of medical care has been exaggerated. Then why not reduce the waiting period? Apparently the State Government is more interested in financing County Welfare Programs with Federal Funds than in assisting the elderly with large hospital bills. Perhaps this refusal to assist the elderly medically indigent is designed to provide support for a further tax on salaries.

We should have a law to prevent the payment of Kerr-Mills Funds to County Treasuries. This law should stop the subsidizing of indigence. This law should require the Department of Social Welfare to use the Kerr-Mills Funds to improve the medical care available to the elderly with financial problems caused by major medical and hospital expenses. Kerr-Mills Funds should be used for the purpose for which they were voted.

Lewis T. Bullock, M.D.
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INFORMATION

Voluntary Health Insurance Coverage in California, 1961

A Report of the Bureau of Research and Planning, California Medical Association

Almost 7 out of every 10 of the estimated population of 16.2 million persons in California, were covered under some form of voluntary health insurance at the end of 1961. The forms of protection included hospital, surgical, regular medical and major medical expense benefits.

The per cent of the civilian population of California covered for surgical benefits was slightly over 66 per cent, while 56 per cent were covered for regular medical expense benefits.

Comparable percentages for the United States are approximately 74 per cent (hospital), 69 per cent (surgical), and 51 per cent (regular medical).

While the percentage of the State's population covered for hospital and surgical expenses is below that for the United States, it is higher for regular medical expense benefits.

The rate of increase in coverage for the different forms of health care protection in California exceeded the rate of population growth during the one-year period ending 1961.

The foregoing summary and the information in the accompanying text, does not reflect the total number of persons in California who receive or are eligible for health care services. A large variety of government financed programs on local, state and federal levels either finance or provide such services to an estimated 40 to 50 per cent of the California population, which does not have voluntary health insurance coverage. No current data are available regarding the number of persons who do not desire voluntary health insurance coverage for a variety of personal or financial reasons.

At the end of 1961 approximately 11.2 million people, or almost seven out of every 10 of an estimated population of 16,163,000 people in California, were covered under some form of voluntary health insurance. These forms of health care coverage include hospital, surgical, regular medical and major medical expense benefits. The per cent of the civilian population covered under insurance providing surgical benefits was approximately 66.3 per cent while those covered by regular medical coverage included 56.1 per cent of the same population.

Table 1 indicates the proportion of the population covered respectively for the various types of health care protection in the United States and California. At the end of 1961 an estimated 74 per cent of the population of the United States was enrolled in a program providing hospital expense coverage as against 69 per cent of the California population. The proportion of persons covered for surgical service benefits was also greater for the United States representing 69 per cent of the population, while 66 per cent of the California population was covered for these benefits.

California's population had 5 per cent more coverage for regular medical expenses; the proportion of the population reportedly covered was 56 per cent for California and 51 per cent for the United States. A possible explanation for this difference is (1) the large proportion of the population served by the medical society sponsored plans (Blue Shield, Foundation, etc.) and (2) the large number of persons covered under the programs of the group of Miscellaneous Plans which generally offer regular medical expense coverage.

Although there are several states whose per cent of population covered is of greater proportion for these various types of coverage, on the average (taking the total United States experience) one can assume that Californians are continuing to enjoy a more comprehensive level of health care coverage.

California's coverage experience is unique in that not only is the State's population continuing to increase at a relatively significant rate (between 2 - 3 per cent per annum) but the per cent increase in coverage is greater than population growth, with regular medical showing the greatest increase. Table 2 indicates the increase in the number of persons covered at the end of 1961 by comparing this number with those covered at the end of 1960.

TABLE 1.—*Per Cent of Persons Covered in Some Form Against Hospital, Surgical, and Regular Medical Expense in the United States and California, December, 1961*

Forms of Coverage	United States (Per Cent)	California (Per Cent)
Hospital	74.1	69.1
Surgical	68.7	66.3
Regular Medical Expense	50.8	56.1

Source: Health Insurance Council, 16th Annual Survey.

There has been a significant increase in those persons covered by regular medical benefits; this coverage has continued to grow in California at a rate greater than hospital or surgical expense coverage.

Since these figures and per cents are gross and do not represent an evaluation of coverage in terms of an available market for voluntary health insurance, perhaps a few comments are in order to place the data in somewhat finer perspective. Aside from those persons who, for personal reasons, do not de-

TABLE 2.—*Number of Persons Covered by the Various Forms of Voluntary Health Insurance Coverage in California, 1960 and 1961, and the Comparative Increase in Coverage*

Form of Coverage	1960	1961	Absolute Increase	Per Cent Increase
Hospital	10,752,000	11,170,000	418,000	3.8
Surgical	10,270,000	10,712,000	442,000	4.3
Regular Medical	8,559,000	9,065,000	506,000	5.9

sire voluntary health insurance coverage, a large number and a significant per cent of those not coming under voluntary health insurance coverage are provided with health care services, or have such services financed for them. These would include—but are not limited to—persons eligible for care through the U. S. Public Health Service, such as American Seamen, Coast Guard Personnel and their dependents; those persons eligible for care as veterans whose care in many cases is for nonservice connected conditions; persons who receive care under vocational rehabilitation; people eligible for care under California's Public Assistance Medical Care Program; Armed Forces Personnel and dependents covered in the Medicare Program; the services provided under the Crippled Children's Program administered by the State Department of Public Health; and last but not least, persons who have no other type of coverage but who are covered by Disability Insurance Hospitalization Benefits, administered by the State Department of Employment.

It is estimated that between 40 per cent to 50 per cent of the remaining five million persons in California not covered by voluntary health insurance have some other type of health coverage. Thus a higher per cent of the population in California has health care service programs available to them than is reflected just in the enrollment under voluntary health insurance programs.

California Medical Association, 693 Sutter Street, San Francisco 2.

Gynecological Cytology

The Use of Fluorescence Technique

For the purpose of diagnostic exfoliative cytology in the detection of uterine cancer, the acridine orange fluorescence technique is inferior to the Papanicolaou procedure and is not recommended. Validity of the Papanicolaou method—although more time consuming and technically more exacting—has been proven by the high degree of correlation between results from its use and histologic examination of tissues concerned. Thus, the Papanicolaou procedure has become the established method of choice in the staining of exfoliated cells and is now widely used by those who are knowledgeable and competent in the field. It is to be emphasized that thoroughly trained cytotechnicians and pathologists are essential. No other method has proven as satisfactory for the detection of atypical and malignant cells or as versatile for other purposes, e.g., the evaluation of hormonal effects, the identification of trichomonads, and an assessment of the inflammatory component as well as quality of the smears submitted. The acridine orange fluorescence technique is an example of other methods that have been studied. Initially, owing to its seeming simplicity and potential for "saving time," it aroused enthusiasm. Subsequently, however, there has been an ever increasing number of unfavorable reports[1,2,3,4] based upon comparative critical studies—regarding its efficacy as a reliable rapid screening method.

The acridine orange fluorescence technique is based upon the fact that malignant cells may contain high amounts of nucleic acid which stains with acidrine orange and may fluoresce brilliantly when examined microscopically under ultraviolet light.

Acridine orange is a basic fluorochrome which allows for differentiation of the two nucleic acids in fixed cytologic preparations: ribose nucleic acid (RNA) in the cytoplasms and nucleolus in shades of metachromatic colors ranging from brick to orange and red, and desoxyribose nucleic acid (DNA) for the nucleus staining in shades of green and yellow. An early review of acridine orange staining and its theory was presented by Wolf.[6]

The cytoplasm of growing cells stains in shades of orange-red with a varying intensity according to the growth gradient and cellular maturation. The diagnostic classification of cells is based on a combination of cytoplasmic and nuclear chemical changes (RNA and DNA content). Hopefully, the enthusiastic promoters of this technique envisaged that a simultaneous evaluation of morphological abnormalities would be possible (encompassing the range of variations found in the variable cell population).

Increased cytoplasmic basophilia (increased RNA concentration) is by no means a specific expression

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A statement by the Commission on Cancer, California Medical Association, February 21, 1963.

of malignancy, but of growth per se. Proliferating cells from atypical cervical epithelia often have apparently the same degree of cytoplasmic basophilia as malignant proliferating cells.[5] Therefore, no basic dye (including acridine orange) which detects basophilia can be a "specific cancer stain." It is to be noted that degenerating or acidophilic malignant cells stain in green color and do not give any "red warning signal."

Again, it is to be emphasized that the degree of fluorescence is related to the degree of cellular multiplication. For this reason, negative findings are possible in those malignancies where mitosis is slight.

Various factors obscure the microscopic field and the sensitivity with which the observer is able to detect cellular alterations that may be pertinent. Hemoglobin quenches fluorescence. Accordingly, the sharpness of the microscopic field may be obscured by the presence of red blood corpuscles, especially if present in considerable numbers. Large numbers of neutrophils (leukocytes) and bacteria mask the appearance of hyperchromatic nuclei as well as the appearance of acidophilic cells with pyknotic nuclei, thus making difficult the precise identification of cellular elements. This "masking" is also applicable to cells with green cytoplasm (poor in RNA) which may be encountered in normal as well as malignant smears.[6]

As more and more reports of qualified investigators become available, it is apparent that use of acridine orange fluorescence technique results in an excessively high number of incorrect diagnoses, positive as well as negative. This factor precludes its use in proper patient care. Qualified investigators, for example, have reported a persistent false positive range as high as 35 per cent[1,2,3,4] and a false negative rate of 10 per cent and higher. By contrast, use of the standard Papanicolaou procedure by qualified pathologists assisted by well trained cytotechnicians results in a false positive and a false negative rate of less than 1 per cent.

Use of the acridine orange fluorescence technique as a "pre-screening procedure," preliminary to restaining and study of "atypical" smears by the Papanicolaou procedure is wasteful of time and for reasons stated above does not circumvent completely factors which lead to false positive and false negative interpretations. Thus, the technique for "prescreening" is not only wasteful but unsafe. Finally, reliance on the fluorescence technique alone is not on behalf of the best interests of the potential cancer patient. It will lead only to confusion in cancer education and control. In conclusion the acridine orange fluorescence technique is less accurate than the Papanicolaou procedure, cannot be depended upon as a safe diagnostic procedure and cannot be recommended for independent use in the cytodiagnosis of gynecologic cancer.

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The A.M.A. Congress on Mental Illness and Health

CHICAGO, OCTOBER 1962

THE AMERICAN MEDICAL ASSOCIATION, recognizing mental illness as "America's most pressing and complex health problem," declared that any effective program to combat it must be ambitious and comprehensive. A congress sponsored by the American Medical Association with the cooperation of the American Psychiatric Association and the support of the National Association of Mental Health had as its purpose the implementation of the broad new mental health program developed and adapted by its Board of Trustees. The American Medical Association's preliminary conference on Mental Illness and Health drew heavily upon such sources as "The Action for Mental Health" and meetings that were held with the chairmen of the committees on mental health of the state medical association. About two thousand people attended this conference, representing all of our 50 states. The steering committee from California, chaired by the chairman of its Committee on Mental Health, and including the President of the California Medical Association, met with about 75 representatives of medicine and ancillary fields of interest from various parts of our state.

This four-day congress devoted its planning to specific activities necessary to implement the American Medical Association's mental health program. Material developed from these meetings emphasized problems of special interest, and attempted to determine priorities for subsequent action at regional, state and local levels.

The American Medical Association, in its statement, presents the concept that a physician participates on two levels, as a man of science, and as a citizen. "The physician has much to gain from a knowledge of modern psychiatric principles and techniques, and much to contribute to the prevention, handling and management of emotional disturbances. Furthermore, as a natural community leader, he is in an excellent position to work for and guide effective programs." The American Medical Association Council on Mental Health stated that mechanisms should be established to enable the profession to furnish medical guidance and support on the national, state and local levels. When necessary, the profession must be prepared to support enabling legislation. The Council encouraged the Woman's Auxiliary of the American Medical Association to help in the augmentation of national and community mental health programs. Medical societies should be a source of up-to-date information on mental health facilities in their areas, and should cooperate with other agencies to establish 24-hour psychiatric information centers dispensing pertinent mental health information.

To facilitate such activities, the American Medical Association will expand its liaison with national mental health organizations and encourage its constituent societies to do the same at their respective levels. The American Medical Association will also gather and disseminate informative material relating the physician to urban and rural community mental health needs.

Comprehensive mental health programs will vary from community to community, but generally facilities and staff should be available to meet these needs.

The California delegation to the A.M.A. Congress on Mental Illness and Health made the following recommendations for action to implement the program of the American Medical Association's Council on Mental Health:

1. That top priority be given to the dissemination of information developed at the Chicago congress and the coordination and implementation of programs by the California Medical Association through its component medical societies. It is recommended that the California Medical Association make available these data not only to its individual members but to other interested organizations.

2. That special attention be paid to:

(a) the problems of children and adolescents, especially preventive measures in addition to treatment;

(b) better utilization of existing facilities both public and private;

(c) the securing of nondiscriminatory prepaid insurance programs by action of the California Medical Association and its appropriate committees;

(d) the encouragement of the development of short term intensive treatment programs where applicable.

3. That the California Medical Association utilize all means of continuing professional education to help the practicing physician to improve his knowledge and skill in dealing with the psychiatric aspects of his practice.

4. That the California Medical Association work to meet the critical manpower shortage in both medical and nonmedical personnel and to encourage the development of programs designed to attract more young people to careers in mental health.

5. That pertinent research be given high priority through the California Medical Association in university centers, in state mental hospitals and in other appropriate facilities.

As an outgrowth of this congress, the California Medical Association, through its Committee on Mental Health is meeting with representatives of the mental health chairmen of the local medical societies throughout the state, to bring to their attention the recommendations and work of the congress. The prime target group is the physician members of the A.M.A., as private citizens as well as members of professional organizations. Their involvement is implicit in the mandate given by the A.M.A. by its House of Delegates and Board of Trustees to its Council on Mental Health, and the subsequent recommendations made at this first congress.

Jack B. Lomas, M.D.
Member, California Medical Association
Committee on Mental Health

NEWS & NOTES

NATIONAL · STATE · COUNTY

FRESNO

Miss Dorothy Hyde of Fresno was installed as president of the **California Medical Assistants Association** at the annual meeting of the organization held in Santa Monica May 18-19. Mrs. Nell Thomas of Riverside was elected president-elect. Dr. Samuel Sherman, president of California Medical Association, was speaker at the meeting.

LOS ANGELES

Dr. H. W. Magoun, professor of anatomy at University of California at Los Angeles School of Medicine, is the recipient of the $5,000 **Passano Award** for 1963. The Award, established in 1943 to encourage medical science and research, went to Dr. Magoun for research concerning functions of the brain. It is supported by annual contributions from the Williams and Wilkins Company, Baltimore.

MARIN

Dr. Warren L. Bostick, former president of the California Medical Association, has been named by Governor Edmund G. Brown to serve on the **Governor's Advisory Committee on Mental Health.** Established in 1960 the Committee advises the state's chief executive on mental health goals and activities of state agencies working in this field.

SANTA CLARA

Dr. Robert A. Chase, chief of the Section of Plastic and Reconstructive Surgery at Yale University School of Medicine, will become executive head of the Department of Surgery at **Stanford University School of Medicine** August 1.

Appointed by the Stanford Board of Trustees at its May meeting, he succeeds Dr. Harry A. Oberhelman, Jr., acting executive for the last year.

GENERAL

The Bay Area's outstanding successful program for poliomyelitis immunization with oral vaccine was honored with the presentation of the **Silver Anvil Award to five local medical societies** and the Bay Area Medical Association Committee, by the Public Relations Society of America at ceremonies in New York last month. The program was saluted as the nation's most outstanding public interest and welfare program of 1962. It was organized by the physicians of the Alameda-Contra Costa Medical Association, Marin Medical Society, San Francisco Medical Society, San Mateo County Medical Society and Santa Clara County Medical Society, who joined to form the Bay Area Medical Association Committee.

Accepting the award for the Committee, **Dr. Edward B. Shaw**, San Francisco, who headed the program, introduced Mrs. Katharine Doyle Spann, vice president of L. C. Cole Company, San Francisco, who served as coordinator for the program.

Dr. Ralph C. Kennedy, chief of professional education at Mendocino State Hospital, has been appointed regional chief of state-local **mental health services** for Northern California programs operating under the Short-Doyle Act. Working under the Department of Mental Hygiene, Dr. Kennedy will assist the four existing community mental health programs under Short-Doyle, and will help establish new services in the 29 northern California counties making up his assigned region. The counties with which Dr. Kennedy will work are: Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, El Dorado, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Sierra, Siskiyou, Solano, Sonoma, Sutter, Tehama, Trinity, Yolo and Yuba. His headquarters will be in the Sacramento State Mental Hygiene Clinic building at 2815 O Street.

* * *

On June 1 Blue Cross in Northern California began using the approved list of the **California Commission for the Accreditation of Nursing Homes and Related Facilities** as one of its standards for reimbursement for nursing home care, the inspecting organization announced recently. Southern California Blue Cross will begin use of the service July 1, the announcement said.

The Commission, which is sponsored by the California Medical Association, the California Hospital Association, the California Dental Association, the Southern California State Dental Asociation and the California Nursing Home Association, has adopted **standards of facilities and care** and upon request from a nursing home will make an inspection for purposes of accreditation.

* * *

New officers of the California Physicians' Service-Blue Shield Board of Trustees were installed in May.

Paul I. Hoagland, M.D., of Pasadena was elected chairman of the board. He assumed the duties of former Chairman John G. Morrison, M.D., of San Leandro, who left the CPS board of trustees after serving the maximum term allowed by CPS by-laws.

Other newly elected officers are Burt L. Davis, M.D., of Palo Alto, vice chairman; John E. Vaughan, M.D., of Bakersfield, secretary; Warren L. Bostick, M.D., of San Rafael, assistant secretary; Angus C. McDonald, M.D., of Huntington Park, treasurer; and Mr. John Cowee of Berkeley, assistant treasurer.

The CPS Board of Trustees is the 19-member governing body of the million member California Blue Shield health plan which paid out more than $50 million to physicians and hospitals for services rendered to members last year.

* * *

Hearings to consider proposed regulations to **prohibit the prescription,** administration, sale or other distribution of beta-cyanogenetic glucosides ("Laetriles") in the diagnosis, treatment, alleviation or cure of cancer will be held by the California State Board of Public Health late this month in Los Angeles and San Francisco. The Los Angeles hearings will begin at 9:30 a.m. June 26 in Room 1138 State Office Building, 107 So. Broadway. Hearings in San Francisco will begin at the same hour on June 28 in Room 1194 State Building Annex, 455 Golden Gate Avenue. Such hearings shall be pursuant to Section 11425 of the Government Code.

The proposed regulations on which the hearings are to be held were developed upon the advice of the Cancer Advisory Council of the California State Department of Public Health.

Persons interested in the proposed regulations are invited by the Health Department to attend the hearings.

EDUCATION NOTICES

MEETINGS AND COURSES

COMMITTEE ON CONTINUING MEDICAL EDUCATION

THIS BULLETIN of the dates of continuing education programs and the meetings of various medical organizations in California is supplied by the Committee on Continuing Medical Education of the California Medical Association. In order that they may be listed here, please send communications relating to your future meetings or postgraduate courses to Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 2.

MEDICAL MEETINGS

JUNE MEETINGS

June 22—**Kaiser Research Foundation.** Laboratory for Study of Human Functioning: 2nd Symposium—Hypertension. Kaiser Center, Oakland. Saturday. 9:00 a.m.-5:00 p.m. Contact: C. Herbert, M.D., 2425 Geary Boulevard, San Francisco 15.

JULY MEETINGS

July 25-26—**Presbyterian Medical Center,** "Complications of Strabismus Surgery." Thursday-Friday. $60. Contact: Eye Bank, Presbyterian Medical Center, 2018 Webster Street, San Francisco 15.

SEPTEMBER MEETINGS

Sept. 12-14—**Saint John's Hospital** Postgraduate Assembly. Saint John's Hospital, Santa Monica. Thursday-Saturday. Contact: John C. Eagan, M.D., director, Saint John's Hospital, 1328 Twenty-second Street, Santa Monica.

Sept. 13—**Rees Stealy Medical Clinic,** 3rd Annual Medical Symposium. Hotel del Coronado, San Diego. 2:00 p.m. Contact: James Bone, business manager, 2001 - 4th Avenue, San Diego 1.

Sept. 25—**National Kidney Disease Foundation, Southern California Chapter,** Third Annual Professional Symposium on Kidney Disease. Statler Hilton Hotel, Los Angeles. Wednesday. 9:00 a.m.-5:00 p.m. Contact: Mrs. Jean Gordon, administrative assistant, 5880 San Vicente Boulevard, Los Angeles 19.

Sept. 25-26—**American Medical Association** Congress on Occupational Health. Jack Tar Hotel, San Francisco. Contact: Henry F. Howe, M.D., secretary, Council on Occupational Health, AMA, 535 North Dearborn Street, Chicago, Illinois.

Sept. 27-28—**Seventh Annual Western Industrial Health Conference.** Jack Tar Hotel, San Francisco. Friday-Saturday. Contact: Chapman Burke, Code 732, Mare Island Naval Shipyard, Vallejo, California.

OCTOBER MEETINGS

Oct. 2-4—**San Francisco Heart Association** 33rd Annual Postgraduate Symposium on Heart Disease. St. Francis Hotel, San Francisco. Wednesday-Friday. 9:00 a.m.-5:00 p.m. Contact: Gene C. Taylor, Executive Director, 259 Geary Street, San Francisco 2.

Oct. 3-6—**Pacific Coast Fertility Society.** Flamingo Hotel, Las Vegas, Nevada. Contact: Julius Winer, M.D., secretary, 9915 Santa Monica Blvd., Beverly Hills.

Oct. 4-5—**San Diego County Heart Association** 13th Annual Professional Symposium on Heart Disease. Town and Country Hotel, Mission Valley Hotel Circle. Friday, 1:00 p.m.-5:00 p.m.; Saturday 9:00 a.m.-5:00 p.m. Contact: Mr. O. M. Avison, executive director, 2545 Fourth Avenue, San Diego 3.

Oct. 17-20—**Academy of Psychosomatic Medicine.** Sheraton-Palace Hotel, San Francisco. Contact: Klaus Berblinger, M.D., program chairman, Langley Porter Neuropsychiatric Institute, University of California School of Medicine, San Francisco 22.

Oct. 18—**Kern County General Hospital** Annual Postgraduate Conference. Bakersfield. Contact: George A. Paulsen, M.D., chairman, Kern County General Hospital, 1830 Flower Street, Bakersfield.

Oct. 18-19—**Kaiser Foundation Hospitals'** Seventh Annual Symposium. Fairmont Hotel, San Francisco. Friday, 7:30 p.m.-9:30 p.m., Saturday, 9:00 a.m.-5:00 p.m. Contact: Martin A. Shearn, M.D., Director of Medical Education, Kaiser Foundation Hospital, Oakland 11.

Oct. 20-23—**California Academy of General Practice** Annual Scientific Assembly. El Cortez Hotel, San Diego. Contact: Mr. William W. Rogers, executive secretary, 9 First Street, Room 900, San Francisco 5.

Oct. 23-24—**American Heart Association** Council on Arteriosclerosis. Annual Meeting. Biltmore Hotel, Los Angeles. Non members $15. Contact: Richard Hurley, M.D., 44 East 23rd Street, New York 10, N. Y.

Oct. 24-25—**American Association for the Surgery of Trauma.** Mark Hopkins Hotel, San Francisco. Contact: William T. Fitts, Jr., M.D., secretary, 3400 Spruce Street, Philadelphia, Pennsylvania.

Oct. 25-27—**American Heart Association** Annual Scientific Sessions. Biltmore Hotel, Los Angeles. Members, medical students, house officers, research fellows, graduate students, U.S. Armed Forces—Free. Others, $15.

Oct. 27-Nov. 1—**American College of Surgeons** Clinical Congress. San Francisco. Contact: John Paul North, M.D., Director, American College of Surgeons, 40 East Erie, Chicago 11, Illinois.

NOVEMBER MEETINGS

Nov. 1-3—**California Society of Internal Medicine** Annual Meeting. El Mirador Hotel, Palm Springs. Contact: Robert L. Paver, M.D., secretary-treasurer, 350 Post Street, San Francisco.

Nov. 1-3—**Southern California Psychiatric Society** Annual Fall Convention. Vacation Village Hotel, San Diego. 8:30 a.m. Contact: Ralph M. Obler, M.D., chairman arrangements committee, 427 North Camden Drive, Beverly Hills.

Nov. 5-13—**Ninth Congress of the Pan-Pacific Surgical Association.** Honolulu, Hawaii. Contact: F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 236, Alexander Young Building, Honolulu 13, Hawaii.

Nov. 6-7—**Los Angeles Pediatric Society,** 20th Annual Brennemann Memorial Lectures. Ambassador Hotel, Los Angeles. Wednesday-Thursday. Contact: William D. Misbach, secretary, 17258 Ventura Blvd., Encino.

Nov. 8-10—**Forty First Medical Society** First Annual Convention. Riviera Hotel, Palm Springs. Contact: Mr. Don E. Rosenthal, Administrative Director, 4775 Santa Monica Boulevard, Los Angeles 29, California.

Nov. 13—**American College of Physicians Southern California Region,** Annual Basic Science Lecture. Statler Hilton Hotel, Los Angeles. 6:30 p.m. Contact: George C. Griffith, M.D., 1136 West 6th Street, Los Angeles 17.

DECEMBER MEETINGS

Dec. 2-6—**American College of Chest Physicians,** Postgraduate Course on Diseases of the Chest. Ambassador Hotel, Los Angeles. Monday-Friday. 9:00 a.m.-5:00 p.m. Contact: Alfred Goldman, M.D., program chairman, 416 N. Bedford Drive, Beverly Hills.

Dec. 5-7—**West Coast Allergy Society,** Annual Meeting. Las Vegas, Nevada. Thursday-Saturday. 9:30 a.m.-5:00 p.m. Non-members $25.00. Contact: Jack M. Chesebro, executive secretary, 1818 S.E. Division, Portland 2, Oregon.

POSTGRADUATE EDUCATION

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE INSTITUTES—1963

June 27-29—**Sacramento Valley Counties,** in cooperation with University of California School of Medicine, San Francisco. Harvey's Wagon Wheel, Lake Tahoe. Chairman: A. John Quinn, M.D., 2600 Capitol Avenue, Suite 312, Sacramento 16.

For information regarding Postgraduate Circuit Courses and Postgraduate Institutes, contact Committee on Continuing Medical Education, California Medical Association, 693 Sutter Street, San Francisco 2. PRospect 6-9400, Ext. 68.

AUDIO-DIGEST FOUNDATION

Continuously—**Audio-Digest Foundation** (a non-profit subsidiary of the California Medical Association) announces the imminent commencement of a new bi-weekly, tape-recorded subscription service, *Audio-Digest Ophthalmology.* Like the Foundation's six services already established (in General Practice, Surgery, Internal Medicine, Obstetrics-Gynecology, Pediatrics, and Anesthesiology) the newest program will offer on-the-spot recorded coverage of leading national meetings and authoritative surveys of the current literature.

A Catalog of Classics, offering outstanding lectures and panel discussions in all areas of medical practice, is also available. For the Catalog and further subscription information, write: Mr. Claron L. Oakley, Editor, 619 South Westlake Avenue, Los Angeles 57.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

June 21-22—**Diseases of the Kidney.** Friday-Saturday. 18 hours.*

June 24-28—**Functional Bracing of the Upper Extremities.** Monday-Friday. 40 hours. $125.

June 28-29—**Minor Surgery.** Friday-Saturday. 12 hours.*

July 3-7—**Advanced Seminars for General Practitioners.** At University of California Residential Conference Center, Lake Arrowhead. Fee includes room and meals for 4 days. Wednesday-Sunday. 20 hours. $150.

July 10-14—**Advanced Seminars in Pediatrics.** At University of California Residential Conference Center, Lake Arrowhead. Fee includes room and meals for 4 days. Wednesday-Sunday. 20 hours. $150.

Aug. 4-7—**Advanced Seminars in Urology.** At University of California Residential Conference Center, Lake Arrowhead. Fee includes room and meals for 3 days. Sunday-Wednesday. 15 hours. $137.50.

Aug. 7-9—**Anesthesiology.** Wednesday-Friday. 18 hours.*

Aug. 7-11—**Advanced Seminars in Internal Medicine.** At University of California Residential Conference Center, Lake Arrowhead. Fee includes room and meals for 4 days. Wednesday-Sunday. 20 hours. $150.

Aug. 23-24—**The Shoulder—Anatomy, Pathology, and Surgery.** Friday-Saturday. 12 hours.*

Sept. 5-7—**The Adolescent.** Thursday-Saturday. 18 hours.*

Sept. 12-Dec. 5—**Teaching Clinics.** Thursday evenings. 24 hours.*

Feb. 19-29, 1964—**Clinical Postgraduate Program in Mexico City.***†

Mar. 7-28, 1964—**Clinical Postgraduate Program in Egypt.***†

April 11-May 2, 1964—**Clinical Postgraduate Program in Hong Kong.***†

Oct. 16-April 15, 1964—**Basic Science Course in Ophthalmology.** Wednesday evenings.*†

Dates by Arrangement—**Clinical Traineeship**—Anatomy, Anesthesia, Dermatology, Pediatrics, Radioisotopes, Urology: 2 weeks, $150; 4 weeks, $250. Minimum period, 2 weeks.

For information on courses for physicians or ancillary personnel, contact: Thomas H. Sternberg, M.D., Assistant Dean and Head, Department of Continuing Education in Medicine and Health Sciences, U.C.L.A. Medical Center, Los Angeles 24, 478-9711, Ext. 2114.

LOMA LINDA UNIVERSITY

June 24-28—**Fetal Heart Monitoring.** White Memorial Hospital. Monday-Friday, 9:00 a.m.-4:00 p.m.

As Arranged—**Traineeships** in clinical and other departments are available by arrangement with department chairmen of the Postgraduate Division. 80 hours minimum.

Anesthesia, 6 months. 250-300 hours. $350.

Pulmonary Diseases—can be arranged.

Continuously—**Illustrated Medical Lectures:** 30-minute tape recordings and accompanying 35-mm filmstrip, 50 to 80 full-color pictures for screen, hand or desk viewer. Available individually or by subscription. 12 or 36 titles per year, all titles produced in one year in any chosen specialty. Projectors and viewers included in subscription plans. Contact: Loma Linda University, Illustrated Medical Lectures, Los Angeles 33.

For course information contact: W. F. Norwood, Ph.D., Assistant Dean and Chairman, Division of Continuing Education, Loma Linda University School of Medicine, 1720 Brooklyn Ave., Los Angeles 33, ANgelus 9-7241, Ext. 214.

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*Fee to be announced.

†Hours to be announced.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

July 3-7—**Advanced Seminars in Dermatology.** California Alumni Association. Tahoe Alumni Center, Lake Tahoe. Wednesday-Sunday. 14 hours. $75. (Limited to Dermatologists.)

Sept. 9-13—**Internal Medicine.** Monday-Friday.*†

Sept. 18-Dec. 4—**Practical Psychotherapy.** Langley Porter Neuropsychiatric Institute. Wednesday. 60 hours. $25.

Sept. 20-21—**Clinical Pediatrics: Renal Disease and Electrolyte Imbalance.** Friday-Saturday.*†

Sept. 24-Nov. 5—**An Overview of Mental Retardation.** Sonoma State Hospital. Tuesdays.*†

Sept. 28-29—**Current Problems in Surgery.** Franklin Hospital, San Francisco. Saturday-Sunday. 15 hours. $25.

Oct. 4-6—**Progress in Urology.** Friday-Sunday. 20½ hours. $60.

Oct. 9-12—**Retinal Detachment Symposium.** Wednesday-Saturday. 16 hours. $75.

Oct. 24-26—**The Preclinical Basis of Gynecology.** Thursday-Saturday.*†

Nov. 1-2—**Graphic Methods in Cardiology.** Friday-Saturday.*†

Nov. 9-11—**Mental Retardation.** Saturday-Monday.*†

Nov. 11-15—**Expanded Surgery of Nasal Septum.** Monday-Friday.*†

Nov. 15-17—**California and the Challenge for Growth: Man Under Stress.** Friday-Sunday.*†

Dec. 5-7—**Annual Ophthalmology Postgraduate Course.** Thursday-Saturday.*†

Dec. 6-7—**Basic Electrocardiography.** Franklin Hospital, San Francisco. Friday-Saturday.*†

Dec. 7-8—**Psychiatry in General Practice.** Stockton State Hospital. Saturday-Sunday.*†

Dec. 13-14—**Orthopedics: Problems of Soft Tissue Disease.** Friday-Saturday.*†

Dec. 21-22—**Psychiatry in General Practice.** Napa State Hospital. Saturday-Sunday.*†

Jan. 11, 1964—**Pediatrics.** Children's Hospital, San Francisco. Saturday.*†

Jan. 29-31—**Annual Symposium: Man and Civilization.** Wednesday-Friday.*†

Continuously—Courses presented by special arrangement: Principles and Clinical Uses of Radioisotopes (full time for one to three months), Anesthesiology (full time for one to three weeks).

For information on courses for physicians or ancillary personnel, contact: Seymour M. Farber, M.D., Assistant Dean, Dept. of Continuing Education in Medicine and Health Sciences, University of California Medical Center, Room 565-U, San Francisco 22, MOntrose 4-3600, Ext. 179.

UNIVERSITY OF SOUTHERN CALIFORNIA

July 31-Aug. 16—**Sixth Annual Refresher Course in Hawaii,** and on board the S.S. *Lurline.* (Air travel also possible.) Tuition: Island portion, $100; Island and ship portions, $125.

Continuously—**Basic Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues $100. Physicians may register at any time.

Continuously—**Advanced Home Course in Electrocardiography.** One year postgraduate series, ECG interpretation by mail. Fifty-two issues $85. Physicians may register at any time.

For course information contact: Phil R. Manning, M.D., Assoc. Dean, Postgraduate Division, USC School of Medicine, 2025 Zonal Ave., Los Angeles 33, CApital 5-1511, Ext. 9.

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*Fee to be announced.

†Hours to be announced.

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(Or.)—Original Article; (Ed.)—Editorial; (CMA)—California Medical Association; (CR)—Case Report; (I)—Information; (LE)—Letters to the Editor; (PE)—Page End.

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Age and Sex Affect Hearing Acuity

Hearing acuity diminishes with advancing age becoming noticeable in men at age 32 and in women at age 37, John F. Corso, Ph.D., a St. Louis psychologist, reported recently.

Marked changes in the hearing of men occur on the average in steps of about 15 years, he said. In women, however, changes are not so marked and the rate of deterioration of hearing is fairly uniform, he said.

Dr. Corso drew his conclusions from a study of 912 persons who had been exposed to a minimum of industrial noises. They ranged in age from 18 to 65 and were in one of six separate age groups, i.e., 18 to 24, 26 to 32, 34 to 40, 43 to 49, 51 to 57 or 59 to 65, he said.

Writing in the March *Archives of Environmental Health*, published by the American Medical Association, Dr. Corso said the effects of aging on hearing depend upon frequency, the number of vibrations or cycles in a unit of time.

The greatest losses in men and women in all age groups occur between 4,000 and 6,000 cycles per second, he said. Nine frequencies were used in the study ranging from 250 to 8,000 cycles, he said.

The findings show clearly that, with one exception, when the age factor is held constant, women have better hearing than men, he said. The exception is in the two oldest age groups where women have poorer hearing than men at approximately 1,000 cycles per second.

The greatest effect of aging on men is at 4,000 cycles per second, Dr. Corso said. The decline in hearing seems to occur in distinctive stages, he said. From 26 to 40, there is relatively little change in the hearing sensitivity of men; then there is a marked drop in sensitivity but no further pronounced changes from 43 to 57 but a second major drop occurs in the 59 to 65 age group, he said.

Dr. Corso is professor and director of the department of psychology, St. Louis University.

Double Barrel Aorta Repaired In New Operation

A frequently fatal tear in the lining of the body's main artery near the heart can now be repaired by surgery, according to an article in the April 6 *Journal of the American Medical Association.*

Drs. George C. Morris Jr., Walter S. Henly and Michael E. DeBakey, Baylor University College of Medicine, Houston, reported the complete correction of the condition in a 32-year-old physician who was "restored to normal health."

The condition is a serious one that proves fatal in more than 75 per cent of cases, the surgeons said.

In the acute form, they said, the process begins when a transverse split occurs in the inner and mid-

(Continued on Page 56)

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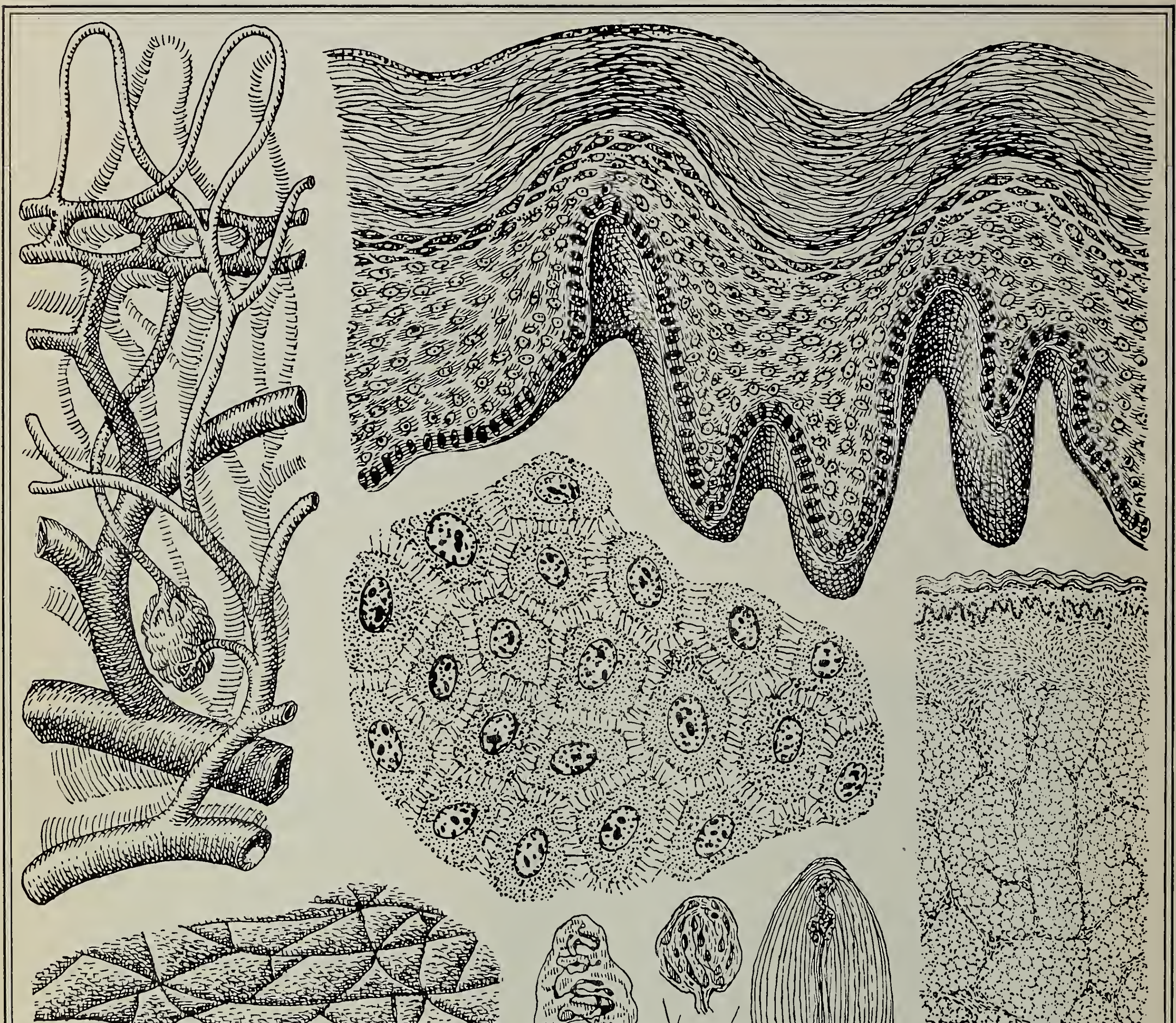
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Double Barrel Aorta Repaired In New Operation

(Continued from Page 39)

dle layers of the aorta where it arches up from the heart. The tear may extend all around the inner circumference of the artery, they said.

Blood pumped from the heart into the aorta then flows through the tear and forces open a new channel between the layers of the artery wall, creating a double-barrel effect, they said.

This process often extends along the entire length of the aorta and into its large branches, they said. It also disrupts the function of the aortic valve located where the artery leaves the heart, they said.

Death from this series of events, technically termed acute dissecting aneurysm, often occurs within hours or several days as a result of additional complications, such as rupture of the entire thickness of the artery wall, they said.

The surgical procedure consists of eliminating the newly formed blood channel by continuous stitches through all layers of the artery wall as far as the dual channels extend, they said. This allows the separated layers to heal back together and the aortic valve to resume its normal function, they said.

The ends of the artery layers at the tear also are joined, they said.

"Such an approach provides the opportunity to save the lives of patients who might otherwise die soon after the process begins, and facilitates technical correction before development of secondary degenerative changes in the aorta and aortic valve," the surgeons said.

Surgical repair of less serious dissecting aneurysms of the aorta located further from the heart has been performed for nearly 10 years by replacing the affected section with a substitute graft, they said.

Dissecting aneurysms occur more commonly in men than in women. They are believed to be caused by the aorta "wearing out" in response to stress.

HYPOXIA, A FACTOR IN ATELECTASIS AND PULMONARY EDEMA—J. A. Lance and H. Latta. Arch. Path., 75:373 (April) 1963.

Adult rats subjected to 4 per cent to 5 per cent O_2 for 24 hours had lung weights nearly one-third heavier than normal. Newborn rats exposed to 3 per cent to 4 per cent O_2 often showed focal atelectasis and pulmonary edema. Neither hypoxia nor introduction of fresh blood plasma into rat lungs produced hyaline membranes.

* * *

PROGNOSIS IN ENDOCARDIAL FIBROELASTOSIS—L. M. Linde and F. H. Adams. Amer. J. Dis. Child., 105:329 (April) 1963.

The clinical findings and angiocardiographic features of endocardial fibroelastosis permit presumptive diagnosis during life. The course of the disease in 17 patients with such a diagnosis is described. Vigorous therapy of intercurrent episodes of congestive heart failure and pneumonia resulted in a lower mortality than has been described for this disease.

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CAUTION: Careful supervision of dosage is advised, especially for patients with a known propensity for taking excessive quantities of drugs. Excessive and prolonged use of glutethimide in susceptible persons, for example, alcoholics, former addicts, and other severe psychoneurotics, has sometimes resulted in dependence and withdrawal reactions. In those cases, dosage should be reduced gradually to lessen the likelihood of withdrawal reactions such as nausea, abdominal discomfort, tremors, or convulsions.

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REFERENCES AND REVIEWS

FIBROUS DYSPLASIA OF BONE—R. J. Reed, Arch Path., 75:480 (May) 1963.

Twenty-five cases of fibrous dysplasia of bone are reviewed. The histology of uncomplicated lesion is specific and characterized by an arrest of bone formation at the stage of woven bone. This characteristic histology may be altered by fractures, degenerative changes, or treatment, to the point of becoming nonspecific. Lesions of fibrous dysplasia persist into adult life with only minor alterations in the basic histology. Monostotic lesions of fibrous dysplasia occur and are distinguishable histologically from giant cell reparative granulomas, ossifying fibromas, nonossifying fibromas, and fibro-osteomas.

* * *

AUTOMATIC AEROSOL DELIVERY FOR INHALATION EXPERIMENTS—P. V. Marsh, Arch Environ. Health, 6:649 (May) 1963.

An apparatus for dispensing automatically a substance, as an aerosol, into an exposure chamber is described. This apparatus is meant for investigation of toxicity via the respiratory tract.

* * *

EUSTACHIAN OBSTRUCTION DUE TO MIDDLE EAR POLYP—R. G. MacKay, Arch Otolaryng., 77:474 (May) 1963.

An airman who developed pain on ascent, when flying, is reported. It was found that the cause of this development was a polyp in an orifice of the eustachian tube, which acted as a ball valve. Removal of the polyp relieved the symptoms.

* * *

RAPID TECHNIQUE FOR OBTAINING LEUKOCYTES FROM SMALL BLOOD SAMPLES—W. B. Shelley, Amer. J. Clin. Path., 39:433 (April) 1963.

A new method is described for obtaining micro-buffy-coat specimens from capillary blood samples. The technique rests on centrifugation of blood (20-30 seconds at 11,500 rpm) in fine transparent plastic tubing within a glass shield. The buffy-coat segment may then be accurately and simply removed by a razor slice. This approach of fractional sampling from capillary plastic tubing has a wide range of application in other density gradient procedures.

* * *

GASTROINTESTINAL ABSORPTION OF ISOHEMAGGLUTININ—J. M. Bowman. Amer. J. Dis. Child., 105:352 (April) 1963.

Rh and A-isohemagglutinins were fed to newborn Rh-negative and Rh-positive babies. Two of 3 Rh-negative and 1 of 3 Rh-positive infants absorbed significant amounts of Rh hemagglutinin. One group-O infant absorbed A-isohemagglutinin. Despite these findings and the presence of Rh antibody in breast milk for at least 3 weeks after birth, the degree of absorption was low and the amount of antibody in milk was so small, that breast feeding of such erythroblastotic infants was harmless.

* * *

SERUM TRANAMINASE CHANGES IN SEVERE BURNS—M. Bocanegra, F. Hinestroza and N. A. Kefalides. Ann. Surg., 157:438 (March) 1963.

Serum glutamic oxalacetic and serum glutamic pyruvic transaminases were determined in 26 children and 16 adults with burns of 10 to 70 per cent body surface. In children and in 25 per cent of the adults, there were moderate increases in the serum levels of both enzymes betwen 2 to 4

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days after burning. A secondary rise occurred by the end of the first week in 30 per cent of the patients. Blister fluid of both children and adults contained higher levels of transaminases than the serum during the first 3 hours after burning. By the second day, these values fell to levels similar to those of serum. It is suggested that the early rise in the serum and blister fluid are due to destruction of skin, and that the late increase is probably due to other factors in addition to skin necrosis.

* * *

HEXACHLOROPHENE BATHING IN CONTROL OF SKIN INFECTIONS—G. G. Graham and E. Morales, Amer. J. Dis. Child., 105:462 (May) 1963.

Hexachlorophene soap was successfully used to reduce the incidence of skin infections in severely malnourished, chronically ill infants in hospital environments. Liquid soap with 3 per cent proved to be superior to bar soap with 2 per cent hexachlorophene. Prolonged daily bathing is effective even in face of very adverse sanitary conditions. Its use is recommended as a routine procedure for susceptible infants.

* * *

COCKAYNE'S SYNDROME WITH CHROMOSOMAL ANALYSIS—J. Windmiller, P. J. Whalley, and C. W. Fink. Amer. J. Dis. Child., 105:204 (Feb.) 1963.

A case of Cockayne's syndrome with chromosomal analysis is reported, and the clinical features are compared with previously reported cases of Cockayne's syndrome and progeria. The chromosomal analysis revealed a modal number of 46 chromosomes with a normal karyotype. This is at variance with the finding of autosomal trisomy involving Group 19-20 in the other single case subjected to chromosomal study.

* * *

VENTRICULOATRIAL SHUNT FOR HYDROCEPHALUS—R. L. McLaurin, I. H. Glass, and S. Kaplan, Amer. J. Dis. Child., 105:216 (Feb.) 1963.

Experiences with electrocardiographic control of catheter insertion in 39 patients undergoing ventriculoatrial shunt for hydrocephalus are summarized. Principles of interpretation of the electocardiogram obtained from the catheter tip in relation to its placement are described. The optimum location—the midright atrium—is characterized by a biphasic P wave. A relatively low rate of necessary shunt revision since this method has been used attests to its advantage.

* * *

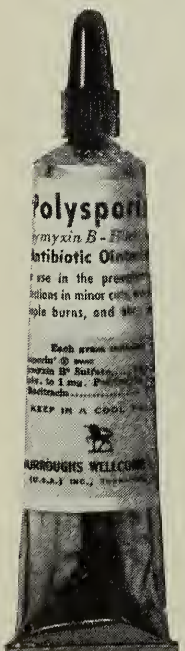
DECLINING SEVERITY OF FIRST ATTACK OF ACUTE RHEUMATIC FEVER—F. E. Mayer, et al., Amer. J. Dis. Child., 105:146 (Feb.) 1963.

Analysis of 793 initial attacks of rheumatic fever in childhood at Bellevue Hospital, from 1935 through 1958, showed changes in the appearance of the major manifestations documented. The most significant changes were decrease in mortality rate and in degree of residual heart disease. Factors contributing to this lessened severity were considered.

* * *

NEARLY UNIVERSAL RASP FOR OTORHINOLARYNGOLOGY—C. Slomczewski, G. Bales, and E. B. Emerson, Jr., Arch Otolaryng., 77:564 (May) 1963.

Attention has been drawn to the Knowles pin as an easily available and extremely adaptable rasp for intranasal and sinus surgery of the very young.



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